Small-Scale Food Processing's Role in Farm to Institution: Filling Market Gaps and Moving Toward a Regional Supply Chain

A thesis submitted by
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In partial fulfillment of the requirements for the degree of

Masters of Arts

in

Urban and Environmental Policy and Planning

Tufts University

May 2018

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Abstract

This thesis explores the challenges and opportunities of small-scale food processing in farm to institution, and analyzes the role that small-scale food processing plays in filling market gaps and moving toward a regional supply chain. This role is examined through a literature review, interviews with farm to institution experts, case studies of three small-scale food processors in the Northeast Region, and an in-depth look at the work CommonWealth Kitchen (CWK), a food business incubator and small-scale food processor in Boston, is doing around institutional contract manufacturing.

This thesis finds that there are similar challenges with food processing in farm to institution as there are with procurement of fresh food, but there are also unique challenges such as buyer habits, funding, and scaling up. It also finds that local procurement laws and mandates have good intent, but they are not strong enough to create major change within the farm to institution movement. One of the most significant findings is the need to reframe the conversation around farm to institution to emphasize the positive economic impact that small-scale food processing can have on the regional economy. Recommendations based off of these findings are made for multiple stakeholders in the movement, with the intent of moving small-scale food processing forward.

Acknowledgements

This research would not have been possible without the support and time of many people.

First, thank you to my advisor Penn Loh for all of his guidance and encouragement, not only throughout this thesis process, but throughout my entire career at UEP. I also would like to thank Jon Witten for his assistance in my research and writing process.

Thanks to Mia Cellucci for providing me with a wealth of information, and for her words of encouragement throughout this process.

Sincere thanks to all of the farm to institution experts and professionals who volunteered their time and provided me with great insight through their interviews.

Lastly, thank you to Matthew Amato who has proven to be my strongest support throughout this thesis process, as well as my time at UEP.

Table of Contents

List of Figures

Chapter 1: Introduction

As the local and alternative food movement continues to grow, new and revisited discussions around urban agriculture, local and sustainable food systems, and farm to table are abundant. These are discussions not only had by policy makers, but also by individuals and organizations that are concerned with environmental issues, health and wellbeing, and the cultivation of local economies.

One discussion that has gained traction in recent decades is farm to institution. Institutions such as hospitals, colleges and universities, public schools, and food banks and pantries are interested in increasing their local food procurement. These institutions are being driven to increase their local food procurement for a variety of reasons including policy changes, customer preferences, reputation, staying competitive, and personal image. Additionally, there has been increasing pressure on nonprofit institutions to invest back into the community to maintain nonprofit status (i.e. required community benefits of hospitals). It has been argued that when implemented equitably, local food procurement has the potential to strengthen the regional and local economy, and provide community health and environmental benefits.[1] While many institutions are interested in finding ways to increase local procurement, there are many barriers and challenges such as lack of knowledge about local food procurement

[1] Policy Link, "Equitable Development Toolkit: Local Food Procurement," March 2015.

policies, short growing and harvest seasons in the Northeast, the cost of local goods vs. non-local goods, lack of production scale and consistency, difficulties working with food management companies, aggregation and distribution challenges, and increasing food safety requirements.

This thesis examines the opportunities and challenges of small-scale food processing and manufacturing[2] in the farm to institution movement and investigates strategy recommendations for researchers, policy makers, institutions, and food processors. Specifically, it examines the role that small-scale food processing plays in filling market gaps and moving toward a regional supply chain, and explores opportunities for supporting and expanding small-scale food processing operations. This is done in five parts: 1. An introduction to the farm to institution movement, focusing on opportunities, challenges, and recommendations, 2. A review of institutional food purchasing, local procurement laws, and the role of small-scale food processing in institutional procurement, 3. Case studies of regional small-scale processing facilities, 4. A detailed case study of CWK, Boston's small-scale food processor involved in farm to institution, and 5. Analysis and recommendations.

[2] The words "processing" and "manufacturing" can be used interchangeably. For the sake of consistency, I will be using "processing" throughout this thesis.

Chapter 2: Background Context

Conventional Food System vs. Local Food Movement

Designed after World War II, the current conventional food system sought to provide cheap food to the mass population.[3] To do this, the system focused on standardization, efficiency, and consolidation, all of which helped decrease the cost of growing food in the form of commodity crops.[4] Commodity crops are specialized crops that are grown in specific areas that are meant to produce one or two food products. These crops are often supported by government subsidies, making them very cheap to grow. In addition to the rise of commodity crops, small farms and businesses began to merge into larger corporations, which consolidated various aspects of the food system under a system of more centralized control. This consolidation led to improved efficiency and lower costs, but work conditions and autonomy over production decreased. The regionalized food systems that existed prior to World War II began to be replaced by a globalized food system.[5] The globalization of the supply chain has led to a reliance on food coming from various locations, some that are far from the point of consumption. Other challenges with the conventional food system include environmental issues due to a dependence on chemical fertilizers during growing,

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[3] "Conventional Food Systems Challenges," *IUFN International Urban Food Network,* Accessed December 12, 2017, http://www.iufn.org/en/alternative-food-systems-for-cities/challenges-conventional-food-system/.
[4] Ibid.
[5] Ibid.

fossil fuels for packaging and distribution, and a monopolistic industry where 90% of food retail self-service is owned by six global companies.[6]

In response to the conventional food system, many people choose to participate in alternative food systems, specifically local food movements. Similar to the conventional food system, the roots of the local food movement can be traced back as early as World War II, when around 20 million Americans "rose to the call for patriotism and planted a victory garden."[7] Some see the beginning of the local food movement as a reaction to the shift in federal farm policy in the 1970s.[8] While the roots of the movement may be contested, it is clear that today the local food movement is thriving. Discussions about urban agriculture, local and sustainable food systems, and farm to table are abundant. These are discussions not only being had by policy makers, but also by individuals who are concerned with environmental issues, health and wellbeing, and the cultivation of local economies.

Over the past decade, local food sales have significantly increased. By 2008, local food sales in the United States reached $4.8 billion, up from $1.2 billion in 2007.[9] Consumers are looking to buy from farmers' markets, CSAs, and farm to table restaurants, and one of the biggest challenges the local food movement currently faces is scaling up. There is the need to engage more

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[6] Ibid.
[7] Ibid.
[8] River Lin, "Local Food Movement," *Earths Friends,* September 10, 2014, Accessed November 3, 2017, https://www.earthsfriends.com/local-food-movement/.
[9] Harvard Food Law and Policy Clinic, "Tools for Advocates: Increasing Local Food Procurement by State Agencies, Colleges and Universities," *Center for Health Law and Policy Innovation,* July 2013.

customers, as well as larger customers, such as institutions, large retailers, and large restaurant groups.

Farm to Institution Overview

One area where interest in scaling up the local food movement has grown is in farm to institution. While fairly straightforward and easy to understand, the premise of farm to institution is providing local, fresh food to local institutions such as hospitals, public schools, universities and colleges, and government agencies in a way that is beneficial to both the farmer and the institutional customer.[10] Farm to institution started in the late 1990s with a handful of secondary schools initiating a farm to school program.[11] It has grown to include over 42,000 schools as of 2014.[12] The idea of farm to institution is well known amongst those involved with environmental, food, and social justice movements, with various regional networks working on expanding farm to institution.

As previously stated, institutions, especially schools, are being driven to increase their local food procurement for a variety of reasons including policy changes, customer preferences, and public image. When implemented in an equitable way, local food procurement can lead to economic revitalization and food system, public health, and environmental benefits.[13] Additionally, it has been found that through local food procurement, "anchor institutions can increase their

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[10] "About Us," *Farm to Institution New England,* Accessed December 12, 2017, https://www.farmtoinstitution.org/about.
[11] "Sectors," *Farm to Institution New England,* Accessed December 12, 2017, https://www.farmtoinstitution.org/sectors.
[12] Ibid.
[13] Policy Link, "Equitable Development Toolkit."

social and economic impacts in their regions while also providing constituents with fresh nutritious food."[14] While many institutions are interested in finding ways to increase their local procurement, there are many barriers and challenges such as lack of knowledge about local food procurement laws, short growing and harvest seasons in the Northeast, the cost of local goods vs. non-local goods, and difficulties working with food management companies.

Benefits

Farm to institution has a variety of benefits for both the farmers and institutions. General benefits include creating closer relationships between farmers and consumers, increasing knowledge of and access to local fresh foods and healthy eating,[15] and supporting the local economy.[16] For farmers, there is the additional benefit of creating value with excess harvest that would otherwise become food waste, and for institutions there is the benefit of good public relations.

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[14] Patrick Billow, "TUH named a 'healthier hospital,'" *Temple News, Temple University,* September 20, 2016.

[15] Peggy F. Bartlett, "Campus Alternative Food Projects and Food Service Realities: Alternative Strategies," Human Organization 73, no. 3 (2017): 189-203; Colleen Matts et al., "Farmer perspectives of Farm to Institution in Michigan: 2012 survey results of vegetable farmers," Renewable Agriculture and Food Systems 31, no 1 (2014): 60-71; Patricia Allen and Julie Guthman, "From 'old school' to 'farm-to-school': Neoliberalization from the ground up," Agriculture and Human Values, no. 23 (2006): 401-415; Andrew J. Knight and Hema Chopra, "Perceived Benefits and Barriers to Local Food Procurement in Publicly Funded Institutions," Journal of Extension 51, no. 5 (2013): 1-12; Rainbow A. Vogt and Lucia L. Kaiser, "Still a time to act: A review of institutional marketing of regionally grown food," Agriculture and Human Values 25 (2008): 241-255.

[16] Diane Harris et al., "Farm to Institution: Creating Access to Healthy Local and Regional Foods," Advances in Nutrition 3, (2012): 343-349; Bartlett, "Campus Alternative Food Projects"; Knight and Chopra, "Perceived Benefits and Barriers to Local Food Procurement";

Creating closer relationships between farmers and consumers reaps benefits for both sets of participants. For consumers, there is the benefit of increased knowledge of, and access to, local fresh foods and healthy eating. Farm to school programs such as school gardens, on site CSAs and farmers markets, and local produce available in institution dining halls increases the amount of fresh fruits and vegetables in consumers diets.[17] This is especially beneficial for low income children who may be at nutritional risk due to a lack of fresh food at home.[18] For farmers, they benefit from being able to sell their produce to a larger, relatively secure market.

Farm to institution also leads to a strong local economy. Rather than spending money within the conventional food system and supporting the global economy, institutions support local farms and food businesses. This can lead to the circulation of money back into the local economy. Additionally, farm to institutions provides the opportunity to create value for existing harvest that would otherwise become food waste, further increasing local farmers income. With increased income from institutions, local farmers and food entrepreneurs have more money to spend in other parts of the local economy, such as personal and business expenses and increasing the amount of local jobs.[19] Thus, farm to institution has the potential to support other members of the community economically. The Harvard Food Law and Policy Clinic note a study from

[17] Allen and Guthman, "Neoliberalization from the ground up."
[18] Ibid.
[19] Harvard Food Law and Policy Clinic, "Tools for Advocates."

Connecticut that showed that for each dollar in agricultural sales, an additional dollar is spent on other economic activity in the state.

Challenges

There are many clear benefits with farm to institution, yet it is difficult to get institutions to adopt this program due to various challenges for both farmers and institutions. Challenges include sourcing products,[20] food safety and liability concerns,[21] and lack of skilled labor for food preparation.[22]

Difficulties with sourcing products covers a range of issues including lack of established market, availability of products, and perception of cost. As farm to institution is a fairly new concept, there is a lack of infrastructure to support aggregation and distribution of products from small to mid-sized farms.[23] While food hubs have been on the rise, there are difficulties with connecting these aggregators with institutions due to strict procurement guidelines. If there is not a food hub in the area, working with multiple small to mid-sized farms is difficult for large institutions, and working with a conventional distributor (i.e. Aramark or Sodexo) is usually the preference.[24] Additionally, institutions are worried about risking their relationship with these larger distributors by simultaneously working with small farms that sell competing products. Challenges around the availability

[20] Harris et al., "Creating Access to Healthy Local and Regional Foods."
[21] Ibid.
[22] Ibid.
[23] Ibid.
[24] Bartlett, "Campus Alternative Food Projects."

of products focus on the seasonality and volume of local products.[25] When working with a conventional distributor, institutions are all but guaranteed year-round availability of produce, even when it is not in season. This allows for standardization and reliability of products and in turn, their menus. When working with local farms, due to seasonality, institutions are not guaranteed that they will always have the produce they want and need at a specific time. This can create issues for institutions that prepare food for large amounts of people every day. Regarding standardization and reliability of products, volume of local products are also more uncertain when working with local farms. These farms may not be able to produce the amount necessary to supply a larger institution, or may not even be producing the type of produce needed. Additionally, farms that are able to sell to institutions may have non-standard portion sizes, making it difficult for institutions.[26] Regarding cost, there is the perception that local produce costs more, which often discourages institutions from procuring locally due to a limited budget.[27]

Concern over food safety and liability is one of the greatest challenges in farm to institution as providing safe food for large quantities of people is one of the highest priorities for institutions.[28] Unlike larger farms that work with conventional distributors, small to mid-sized farms do not carry liability insurance, which makes it tricky for larger institutions to purchase from them as

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[25] Harris et al., "Creating Access to Healthy Local and Regional Foods"; Matts et al., "Farmer perspectives of Farm to Institution"; Harvard Food Law and Policy Clinic, "Tools for Advocates."
[26] Bartlett, "Campus Alternative Food Projects."
[27] Harvard Food Law and Policy Clinic, "Tools for Advocates."
[28] Harris et al., "Creating Access to Healthy Local and Regional Foods."

some institutions require this insurance. Additionally, many of the guidelines that larger farms adhere to, such as Good Agricultural Practices (GAP) and Good Handling Practices (GHP), are costly for small to mid-sized farms to implement. There are ways around these safety and liability issues such as lower cost third party certification or for those in charge of institutional purchasing to visit the farm, inspect the operations, and meet the growers.[29] However, these strategies are costly and take time that many institutions are not able to give.

Lack of skilled labor for food preparation is another challenge in farm to institution. Many food service workers at institutions are accustomed to heat-and-serve products and lack the ability to work with and transform raw products. Much of the produce delivered by conventional distribution companies is pre-washed, pre-cut, and lightly (in some cases heavily) processed. In addition to the lack of infrastructure to aggregate and distribute locally grown food, there is a lack of processing and packaging infrastructure,[30] which would enable small and mid-sized farms to provide pre-processed produce to institutions. Additionally, many institutional facilities are not updated enough to accommodate the preparation and cooking of raw ingredients. Additional staff training and updated kitchen facilities would be needed for many institutions to be able to work with unprocessed local produce.

[29] Ibid.
[30] Matts et al., "Farmer perspectives of Farm to Institution."

Recommendations From the Literature

Various recommendations are made in the literature on how to handle the challenges previously mentioned. They include more local, state, and regional policies to help facilitate farm to institution, better risk management strategies to ensure quantity, quality of local produce, and reliable delivery, increased infrastructure for the sale of local produce, and cross-sector partnerships.

The literature recommends that advocates of farm to institution promote local, state, and regional policy initiatives.[31] Ideally, the legislation passed would either set a preference for the procurement of local food products or a target for local food purchasing. However, legislation that urges a tiered preference system (highest preference being local, in-state products, lower preference to regional items, and no preference for products from outside the region) is also encouraged. Additionally, as enforcement of local procurement laws is difficult, it is recommended that there be required annual reporting from agencies to see whether they are complying, penalties for agencies that do not comply, funding available to aid with local procurement, ranking of colleges and universities based on their procurement practices, and a public directory of farmers for public agencies to access, and a public director of purchasing agents at public institutions for farmers.[32]

The next recommendation to improve farm to institution from the literature is the creation of better and less costly risk management strategies. This

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[31] Harvard Food Law and Policy Clinic, "Tools for Advocates."
[32] Ibid.

could include the creation of third party inspections or the requirement of specific training for small to mid-size farms, rather than costly certifications. Regarding costly liability insurance, farmers could form cooperatives that carry a single insurance policy. Each of these strategies would help alleviate the institutional worries regarding food safety and liability. Additionally, they could help ensure the quantity and quality of local produce, as well as encourage reliable delivery.

Increased infrastructure for farm to institution includes the building of food processing facilities and centralized facilities.[33] The creation of centralized facilities for small to mid-scale farms would allow for easier aggregation, storage, processing, distribution, and marketing of local produce to institutions. This centralized facility could be a physical food hub, but could also include online marketplaces that link farmers with institutions. An example of an online marketplace is MarketMaker, which is a national network of states that connects local food producers with potential customers such as food retailers, processors, and consumers.[34] The online marketplace helps producers and buyers build strategic partnerships through a large, in-depth database. This database features a diverse community of food-related businesses and allows for users to search and connect with others throughout the food system. For farm to institution infrastructure to increase there needs to be work done to encourage farmers to

[33] Harris et al., "Creating Access to Healthy Local and Regional Foods."
[34]"Market Maker: Linking Agricultural and Seafood Markets," Accessed March 13, 2018, https://foodmarketmaker.com/.

utilize centralized facilities and for these facilities to be recognized as formal services that institutions can buy from.[35]

[35] Harvard Food Law and Policy Clinic, "Tools for Advocates."

Chapter 3: Methodology

The aim of this thesis was to explore the challenges and opportunities of small-scale food processing in the farm to institution movement, with the outcomes of this thesis meant to inform the role of small-scale food processing in institutional local procurement. As farm to institution is a large topic, some parameters to the scope of this research were set.

Due to the regional nature of farm to institution work, the geographic focus of this thesis was the Northeast, with an emphasis on work happening in Boston, MA. Boston was chosen due to the high number of institutions based in and around the city that could participate in farm to institution; there are over 50 higher education institutions and 24 hospitals in the Boston metropolitan area.[36]

Due to the time limitations of this research, and the fact that procurement can vary from institution to institution, my research focused on anchor institutions, specifically universities. Anchor institutions (typically identified as universities and hospitals) were chosen as they are institutions that are physically rooted in their local communities and have the potential to have great impact on the local and regional economy.[37] Universities were specifically chosen due to extensive prior research on farm to university, which allowed for deeper inquiry than if I focused on any of the other types of anchor institutions.

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[36] Shannon Brownlee, "Mass. has too many hospitals for its own good," Boston Globe, June 15, 2012; Allison Pohle, "Massachusetts is the 8th most popular destination for college students," Boston.com, September 1, 2015.

[37] "Overview: Anchor Institutions," Community-Wealth.org, Accessed April 15, 2018, https://community-wealth.org/strategies/panel/anchors/index.html.

My guiding research question was: what is small-scale food processing's current role within the farm to institution movement, and how might this role shift moving forward? Additional questions included:

- How does small-scale food processing address challenges in the farm to institution movement?
- What strategies can be utilized to advance institutional procurement of local food?
- What partners can help close the gaps within farm to institution and create a model regional supply chain?
- How are universities addressing farm to institution challenges and how do they view small-scale food processing's role?
- What challenges are small-scale food processors currently facing, and what are some of their strategies to address these challenges?
- What does CommonWealth Kitchen's small-scale food processing operation currently look like, what challenges are they facing, and what is the potential of this operation in the future?

My method for examining these questions included three different approaches: background research and literature review, case studies, and interviews.

Background Research and Literature Review

There is an increasing amount of information available to the public about the local food movement and farm to institution, and the challenges and

opportunities that arise. My research began with a review of existing information on the origins of the local food movement and opportunities and challenges in farm to institution. After gaining an understanding of the landscape, I reviewed existing literature that focused on the institutional side of farm to institution, specifically on institutional food purchasing and local procurement, local procurement laws, and the relationship between food processing and increased local procurement.

Case Studies

As one objective of my thesis was to understand what role small-scale food processing plays in farm to institution, one of my methods included case studies of small-scale food processors. Three short case studies of regional small-scale food processors were produced, as well as a detailed case study of CWK's work to show how small-scale food processing is contributing to farm to institution in the Boston area.

For the case studies of regional small-scale food processors, I focused on the Western Massachusetts Food Processing Center, the Vermont Food Venture Center (VFVC), and the Farm Bridge in New York's Hudson Valley. These case studies were developed with information gathered from online sources and one-on-one interviews with staff members. As previously mentioned, farm to institution can vary regionally, so these three small-scale food processors were chosen due to their location in the Northeast. Additionally, the work that the Western Mass. Food Processing Center and the VFVC does is recognized

regionally. These case studies provided examples of what other small-scale food processing facilities were doing, and what their operating challenges were.

A detailed case study of CWK was provided as they are Boston's small-scale food processor that is recognized for the work they are doing in farm to institution. This case study provides detail on the organization's small-scale food processing enterprise, examines CWK's relationships with institutional partners, and looks at the opportunities and challenges of this model to fill a gap in the procurement of local food. Produced through document review and interviews with CWK staff, this case study provides one of the first detailed reports of CWK's small-scale food processing program, which helps situate their role in farm to institution. Additionally, it allows for examination of the challenges and opportunities within this program and lends itself for comparison to other small-scale food processing programs in the region.

Interviews

In addition to interviews with staff at food processing facilities, CWK staff, and CWK institutional partners for the case studies, I completed semi-structured interviews with experts in the farm to institution field and staff at food service management companies, to better understand the farm to institution field and the complexities that arise (see Appendix A for a full list of interviewees). In total there were 15 interviews, all of which took between 45 and 90 minutes. The aim of these interviews was to learn more about the local procurement process, strategy recommendations to address the challenges within the farm to institution

movement, and how organizations are working together to create a model regional supply chain. These interviews were guided by pre-written interview questions based on the research questions listed above (see Appendix B).

Interview subjects were selected based on their prominence in the farm to institution field, relationship to CWK, and/or their experience with local procurement. Subjects that were experts in the field, worked closely with CWK, worked at food processing centers, or were local procurement staff at Boston-area institutions were recruited first. From there, additional subjects were recruited based on recommendations from the first round of interviewees.

Challenges and Limitations

Given the straightforward nature of my methods, I ran into few challenges and limitations. By far, the largest challenge was narrowing the scope of this project. Farm to institution is a large topic that can be approached many different ways. At times, it was difficult to limit myself to the chosen scope and found that at times when questions were answered, the answer raised several new questions. Thus, there is various follow up research that is recommended in Chapter 8.

Another challenge that I ran into was the lack of response to interview inquiries. There were a few no-responses and a few refusals. Additionally, as my interview pool is small, it is important to understand that the recommendations and conclusions are formed from limited input and are not meant to be representative. With a larger sample size, conclusions from this thesis could be better supported.

Chapter 4: Literature Review

Institutional Food Purchasing and Local Procurement

Overview of Institutional Food Purchasing at Colleges and Universities

Institutional food purchasing entities at colleges and universities are responsible for price negotiation with food suppliers, menu development, facility maintenance, staffing and management, and ensuring regulatory compliance.[38] There are two different ways that this entity can operate at institutions: they can be self-operated (self-op) or they can outsource to a contracted food service management company (FSMC).

For both types of operations, institutional purchasing follows a similar path. Institutional purchasers contract with a prime vendor, who serves as the largest distributor and provider of foods, such as Sysco, U.S. Foods, or Bon Appétit Management Company.[39] This prime vendor has a set list of products and vendors, which institutions utilize to purchase the majority of their goods. By purchasing from this approved list of products and vendors, the institutional entity responsible for food purchasing is able to negotiate discounted, volume-based prices. On average, 80% of institutional purchases are made from this pre-

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[38] Claire Fitch and Raychel Santo, *Instituting Change: An Overview of Institutional Food Procurement and Recommendations for Improvement,* Johns Hopkins Center for a Livable Future, February 2016; "Setting the Table for Success: A Toolkit for Increasing Local Food Purchasing by Institutional Food Service Management," Farm to Institution New England, https://www.farmtoinstitution.org/food-service-toolkit.
[39] Ibid.

approved vendor and product list,[40] and up to 100% of purchases can be made from the pre-approved list.[41] Purchasing from outside the pre-approved list is highly discouraged and generally only happens when the desired product is not supplied by an approved vendor. Local and regional suppliers, who supply seasonal produce, fresh dairy items, and specialty products are not often on the approved vendor list. Thus, it is very difficult for local and regional suppliers to contract with institutions. An additional barrier for local and regional suppliers is the liability insurance and food safety certifications that are required for vendors to work with institutions. They are required to have liability insurance between $1 million and $7 million, which provides general and product liability coverage, as well as risk protection.[42] Additionally, they are required to have various food safety measures such as GAP (Good Agricultural Practices) certification and/or a HAACP (Hazard Analysis and Critical Control Points) plan,[43] which ensure that the final product sold has been produced, packaged, handled, and stored as safely as possible and that there are minimal food safety hazards.[44] Insurance and food safety measures are required so that risk on the food service management company and/or university is minimized.

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[40] Ibid.
[41] Fitch and Santo, *Overview of Institutional Food Procurement.*
[42] "Coverage Details," Food Liability Insurance Program, Accessed March 30, 2018, https://www.fliprogram.com/coverage_details.
[43] "Toolkit for Increasing Local Food Purchasing," Farm to Institution New England.
[44] "Good Agricultural Practices (GAP) & Good Handling Practices (GHP)," United States Department of Agriculture, Accessed March 30, 2018, https://www.ams.usda.gov/services/auditing/gap-ghp; "Hazard Analysis Critical Control Point (HACCP), U.S. Food & Drug Administration, Accessed March 30, 2018, https://www.fda.gov/Food/GuidanceRegulation/HACCP/.

In addition to utilizing a pre-approved vendor list, both self-op institutions and ones that work with FSMCs typically participate in group purchasing organizations (GPOs).[45] GPOs are independently or association-owned national or regional organizations who utilize the volume demand of their members to negotiate prices with large producers and distributors. Working with a GPO creates stability in pricing and demand for institutional food services due to the focus on price point and product volume. However, this focus makes it difficult to obtain products from small-scale producers as they typically cannot match the price point and product volume requested.

Figure 1: The Pathway of Institutional Food Purchasing

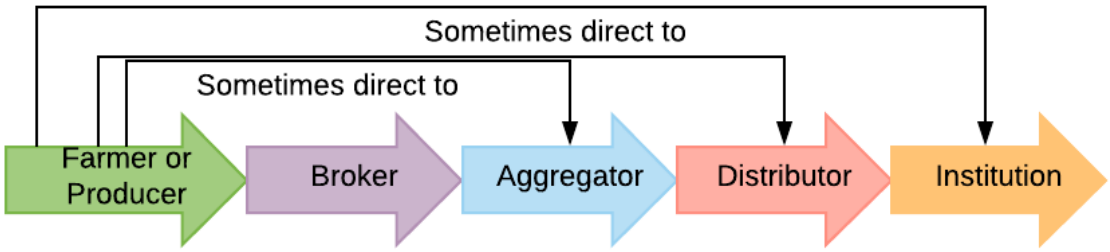

Figure 1: The Pathway of Institutional Food Procurement, adapted from Michigan Good Food

Figure 1 demonstrates the typical pathway of institutional food purchasing for both institutions that are self-op and those that are managed by FSMCs. Self-op institutions would oversee this pathway themselves, and FSMCs would manage this pathway for any institution that contracts with them. The typical pathway of institutional food purchasing starts with farmers or food producers working with a sales broker to sell their produce to an aggregator. Aggregators purchase produce from numerous farms, and aggregate this produce in one central

[45] Ibid.

location where a distributor comes to pick up any orders. Distributors then deliver produce orders to institutional purchasers. In some cases, the farmer and food businesses will refrain from using a sales broker and can sell directly to the aggregator, distributor, or even the institutional purchaser, thus shortening the pathway.

Working with Food Service Management Companies

Typically, colleges and universities contract their food services out to management companies due to the limited expertise or staff to manage their dining services. Contracting with FSMCs is beneficial to institutions as it creates potential financial and administrative benefits by streamlining their operations. FSMCs run all aspects of institutional dining services including preparing statements of profit/loss, laying out labor, procuring food, and conducting a weekly inventory of all food and non-food products. College and university food service departments typically do not have to provide any capital as the FSMC takes on costs and receives profits as stated in their contract. The three largest FSMCs are Compass Group, Aramark, and Sodexo. Combined they reached $33 billion in revenue in 2014[46] and account for 45% of North American food service.

The process for hiring a food management company starts with distributing a Request for Proposals (RFP). RFPs include the institutional expectations and goals for how food service will be operated and implemented,[47]

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[46] Fitch and Santo, *Overview of Institutional Food Procurement.*
[47] "Contract & RFP Language," Farm to Institution New England, Accessed March 18, 2018, https://www.farmtoinstitution.org/contract-rfp-language.

including specifics around finances, food service plans, health and wellness programs, purchasing standards, regulatory compliance, marketing and promotion, and client relations.[48] The institution's dining services department reviews the RFP responses, and chooses the strongest company to contract with. Contracts between FSMCs and institutions range from a year to over a decade[49] and detail the relationship between the FSMC and institution on topics such as financials (i.e. product pricing, profits, and rebates), food procurement processes, food service plans, and programming.

While contracting with a FSMC helps streamline an institution's operations, it also restricts institutional control and autonomy when it comes to purchasing decisions. As previously stated, pre-approved vendor and product lists are used, and standard contracts with FSMCs require 80-100% of purchasing coming from this pre-approved list. This is due not only to the negotiated, discounted, and volume-based prices, but also to Volume Discount Agreements (VDAs). VDAs are a rebate that FSMCs receive from food suppliers, processors, and distributors and are used to help generate their revenue. Lower prices are negotiated between the FSMC and vendor, and then the price is increased when sold to the institution. The difference in price is returned to the FSMC as a rebate. Because of this, vendors that do not pay rebates rarely appear on the list of approved vendors, which disproportionately affects small-to-medium sized farms

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[48] Matt Stone, "How to Prepare a Corporate Food Service Request for Proposal (RFP)," *CafeServices,* https://www.corporatediningservices.com/cafeteria-management/corporate-dining-food-service-rfp.htm.
[49] "Contract & RFP Language," Farm to Institution New England.

as they often cannot afford to increase their prices higher than they already are, nor do they have the ability to scale up and offer volume discounts.

If an institution is interested in purchasing a product from a vendor that is not on the approved vendor list there is a small amount of petty cash that can be utilized. However, this is often used just for special purchasing opportunities. For a product to become a more common item to buy, the product must be added to the approved product list. The process to add a product to the approved product list is long and cumbersome, typically taking up to six months.[50] First, a request must be made with the district manager who will then speak with the corporate office to see if the item can be purchased. If so, the vendor must then carry one of the food safety measures mentioned above (GAP and/or HAACP) as well as liability insurance. If the vendor does not have one of these food safety measures or liability insurance, the costs of obtaining such licensing and insurance are very high. Even if the producer has these safety measures and liability insurance, typically the product can only be added to the approved product list if it does not compete with an existing approved product.

As the majority of dining service programs are run by FSMCs, it is important to understand their involvement in local procurement and the challenges faced. Unfortunately, as the goal of FSMCs is streamlining institutional dining services, it is difficult to get these companies to expand their approved vendor list and work with small-to-medium sized farms and processors. Another difficulty for FSMCs when it comes to local procurement are issues

[50] "Toolkit for Increasing Local Food Purchasing," Farm to Institution New England.

around traceability, tracking, and distribution. To be efficient and operational, FSMCs need to have thorough and reliable tracking capabilities, which is rarely offered with local produce and products from small-to-medium sized farms and producers. This, coupled with the lack of ability for distributors to track down to the source of origin with their current system, makes it complicated for FSMCs to include local products on their vendor list as they cannot easily or confidently identify which of the products offered are local.

Self-Operated Food Service

In contrast to institutions that work with FSMCs, self-operated (self-op) institutions have more flexibility and autonomy when it comes to their dining services. They hire and manage their own employees, manage inventory, develop recipes, purchase goods, and more.[51] Institutions find self-op appealing due to administration willingness and interest in recruiting and managing experienced food staff, existing facilities and equipment to support an internal food service organization, and the desire for autonomy over profit, values, purchasing power, and ability to meet client or student demands.[52]

Similar to institutions that work with FSMCs, institutions that are self-op generally contract with a prime vendor. While they also utilize an approved vendor list, self-op institutions can more easily explore other procurement options. They have more flexibility to work with smaller to medium sized farms

[51] "Transitioning to Self-Operation," Farm to Institution New England, Accessed March 18, 2018.
[52] "Toolkit for Increasing Local Food Purchasing," Farm to Institution New England.

and producers. Additionally, as they have a direct relationship with the prime vendor rather than one through a FSMC, they are able to request specific products and have the ability to ask that these products are offered more frequently.[53]

Institutions that are self-op believe managing themselves is more beneficial than working with a FSMC due to the increased flexibility and autonomy; however, they must invest a large amount of resources into their dining services. They must ensure that they have all of the necessary facilities and equipment, which for institutions looking to move from contracting with a FSMC to self-op can be costly and take a lot of time.[54] Additionally, while there is the flexibility of working with more than just a prime vendor, it takes time and energy to manage various vendor relationships on a frequent basis. This is especially true of small-to-medium sized farms and producers as the infrastructure for aggregation and distribution of their products is not often in place.

An example of a large self-op institution is Harvard University Dining Services (HUDS), the oldest collegiate foodservice in the country and one that has been self-operated for over 300 years.[55] HUDS is one of the largest collegiate foodservices in the country, serving an average of 25,000 meals a day during the academic year, with around $68 million in annual foodservice revenue.[56] Being self-op allows HUDS to have complete control over what is sourced. While they

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[53] Ibid.
[54] David H. Porter, "Self-op vs. contract: what's right for your campus? Administrators must weigh several critical factors in choosing the method of management best suited to their campuses," Food Management, (2006): 32.
[55] "About HUDS," Harvard University Dining Services, Accessed March 13, 2018, https://dining.harvard.edu/about-huds.
[56] Ibid.

do contract with a prime vendor, Sysco, HUDS also contracts with dairy, meat, and specialty food vendors. Additionally, they have their own commissary kitchen where soups and sauces are made in house. Being self-op also allows HUDS to place a heavy emphasis on sustainability, and their purchasing focuses greatly on local foods (products within a 250 mile radius). While they do not set targets for how much of their products are sourced locally, currently about 32% of the food budget is spent on local foods with HUDS staff looking for ways to increase this number.[57] As a result of this focus, HUDS purchases produce from about 250 local farms and works with organizations in the area to increase the amount of local products they sources, such as the Boston Area Gleaners and CommonWealth Kitchen.[58] A more comprehensive look at HUDS relationship with CommonWealth Kitchen can be found in Chapter 6.

Local Food Procurement: Real Food Challenge and Farm to Institution New England

While many institutional dining directors and procurement agents are interested in increasing the amount of local food sourced, few are willing to commit to a target of local food procured. However, there is a small group of about 40 colleges and universities across the country that have pledged to increase local procurement by 20 to 40% by signing the Real Food Campus Commitment. Here in Massachusetts, Clark University, University of Massachusetts- Amherst, and Stonehill College have signed the commitment.

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[57] "Sustainability," Harvard University Dining Services, Accessed March 13, 2018, https://dining.harvard.edu/about-huds/sustainability.
[58] Ibid.

The Real Food Campus Commitment is managed by the Real Food Challenge, which operates as an independent, self-funded program of The Food Project, based in Boston, MA. The Real Food Challenge works with youth and universities to "shift $1 billion of existing university food budgets away from industrial farms and junk food and towards local/community-based, fair, ecologically sound and humane food sources… by 2020."[59] This type of food is what the program refers to as "real food." To work towards an increase of "real food" procurement, the Real Food Challenge has worked with students and dining directors at various campuses to secure over $60 million worth of pledges[60] from dining directors and procurement agencies to purchases "real food."

Various programs are offered by the Real Food Challenge such as on-site trainings and workshops for dining directors on how to increase the procurement of "real food," and strategy retreats for campus "real food" student leaders, where strategies for implementing and sustaining a real food campaign on their campus are discussed. The Real Food Challenge also hosts a National Summit held every other year, which brings together a wide variety of food activists and leaders. This summit provides attendees with the opportunity to learn about "real food" procurement through sessions with movement leaders, skill-based workshops, field trips, and panel discussions.

Another organization that is working to increase the amount of local food procured by institutions is the nonprofit Farm to Institution New England (FINE).

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[59] "About," Real Food Challenge, Accessed March 13, 2018, https://www.realfoodchallenge.org/about/.
[60] Ibid.

FINE is a six-state network that works to transform the food systems by increasing the amount of local food in the region's institutions. The organization serves as an expansive network for those who work on farm to institution issues, does programmatic and research work that address key barriers, and advances policy.[61] Their projects all fall within the topics of farm to campus, metrics, food processing, and food service.[62]

In addition to the programmatic and research work that FINE does, they also host a farm to institution summit each year. This summit convenes farm to institution stakeholders such as food producers, decision-makers, policy makers, researchers, and institutions. The summit's focus changes each year, but in the past has included topics on a range of issues such as partner development, supply chain management, framing, and racial equity.[63] The summit program includes an assortment of sessions, speakers, activities, field trips, exhibitors, and networking time, and allows for the sharing of challenges and strategies for addressing these challenges amongst participants.

Local Procurement Policy and Laws

Due to increased interest in locally grown and produced food and the rise of the farm to institution movement, local and regional governments have seen the

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[61] "About Us," *Farm to Institution New England*, Accessed November 1, 2017, https://www.farmtoinstitution.org/about.

[62] "Projects," *Farm to Institution New England*, Accessed November 1, 2017, https://www.farmtoinstitution.org/about.

[63] "New England Farm to Institution Summit," Farm to Institution New England, Accessed April 16, 2018, www.f2isummit.org.

potential for public institutions to serve as leading purchasers of locally grown food.[64] To encourage public institutions to prioritize local procurement, states are increasingly enacting legislation that instructs state institutions to apply a purchasing preference for state-grown or produced food.[65] There are two categories of local procurement laws: the first is a preference for local food during purchasing as long as it does not cost a certain percentage more than the typically bought food or food produced out of state, and the second is a targeted mandate for local food procurement such as a percentage of the food purchased by an institution must be local.[66] Currently, 37 states have local procurement laws.[67]

Massachusetts' Procurement Laws and Policies

Here in Massachusetts there are two laws focused on procurement by state agencies: Chapter 30 which establishes rules and regulations that all agencies must follow when purchasing any goods (not specific to food procurement) and Chapter 7, Section 23B which is the state's local food procurement law. In 2012 the Harvard Food Law and Policy Clinic wrote an extensive report that looked into local food procurement by Massachusetts state agencies. The report examines Chapter 30 and Chapter 7, Section 23B of the Massachusetts General Laws. While these laws are a good first step towards increasing local food procurement in state institutions, these laws are not binding. Rather, they are precatory, which

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[64] Emily Broad Leib et al., *Increasing Local Food Procurement by Massachusetts State Colleges or Universities,* Harvard Food Law and Policy Clinic, October 2012.
[65] Ibid.
[66] Harvard Food Law and Policy Clinic, "Tools for Advocates."
[67] Ibid.

means the language implies a desire not a requirement to purchase locally grown and processed goods.

Chapter 30: Massachusetts' General Procurement Laws

Chapter 30 of the Massachusetts General Procurement Laws details procurement requirements for the administration of the state government, not specific to food procurement. However, it gives insight into the procurement process for state agencies. The legal requirements of Chapter 30 apply to the eighty-two agencies that fall within the Executive Branch.

Chapter 30 states that all Executive Branch state agencies must procure goods and services through or under the direction of the Operational Services Division (OSD). OSD is an oversight agency located in the Executive Office for Administration and Finance, which establishes statewide contracts on behalf of agencies and other purchasers, provides technical assistance, and monitors compliance with applicable procurement statutes, regulations and policies. Also involved with agency procurement protocols is the Office of the Comptroller (CTR).

Chapter 7, Section 23B: Massachusetts' Local Procurement Law

Chapter 7, Section 23B, also known as Massachusetts' local food procurement law, was enacted in 2006 as a way to "promote job creation,

economic stability, and competitiveness in the Massachusetts economy."[68] Massachusetts' local procurement law falls into the first category of the types of local procurement laws, as it is preference law rather than a target law. There are three subsections that originally applied only to state agencies, but in 2010 language was added and an amendment was passed to include state colleges and universities in the first two subsections. The three subsections of Section 23B can be summarized as follows:

1. *Command to Prefer Local Food:* State agencies, colleges, and universities must express a state preference for the procurement of Massachusetts grown or processed products.
2. *Duty to Make Reasonable Effort to Buy Local Food:* Purchasing agents at every state agency, college, and university must be directed to make a reasonable effort to purchase locally grown or processed products.
3. *Requirement to Buy Local Food:* State agencies (excluding state colleges and universities) must purchase locally grown or processed food as long as the price of the goods do not exceed more than 10% the price of the non-local goods.

Language including state colleges and universities in the third subsection of Section 23B once was included, but ended up being omitted before the amendment was approved. It is believed that this language was removed due to the fact that requiring state colleges and universities to give local food a 10%

[68] Economic Investments, H.R. 5057, 184th Gen Ct. (Mass. 2006).

preference would be in opposition to a mandate that required state colleges and universities to keep student expenses in check. Thus, without including state colleges and universities in the third subsection, state colleges and universities are not mandated to buy local food, but rather they just make reasonable effort to do so.

Additionally, even if colleges and universities were added into the third subsection of Section 23B, it is possible that local procurement would not increase drastically, as these institutions contract with food management companies, and Section 23B is not binding for them. As food management companies are considered contractors with state colleges and universities, they are not acting as legal agents of the school, so they are not accountable for fulfilling any legislative goals directed towards state colleges and universities.[69]

Local Preference Laws Nationwide

According to the Harvard Food Law and Policy Clinic, every state has established some form of preference for in-state products or businesses, and the majority of states have promoted the procurement of locally grown or processed food. These laws are directed at state agencies, which does not necessarily include state colleges and universities, and are often optional rather than mandatory. While there are two categories of local procurement laws, a mandated target or a preference for local food, the Harvard Food Law and Policy Clinic found that state preference laws are the most common, and can be split into three categories:

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[69] Emily Broad Leib et al., *Increasing Local Food Procurement*.

1. Preference to domestic bidders when there is no sacrifice or loss of quality and price is comparable, 2. Preference to domestic bidders when there is no sacrifice or loss of quality with a differential cost preference for in-state bidders, and 3. Reciprocal preference.

Preference to domestic bidders when there is no sacrifice or loss of quality and price is comparable is essentially saying all things equal, the state agency should purchase locally grown and processed goods. This type of law can be seen in Missouri, where state purchasing agents "shall give preference to all commodities...produced, processed, or grown within the State of Missouri...when quality is equal or better and delivered price is the same or less" or "whenever competing bids, in their entirety, are comparable."[70] Other states with this type of law include Iowa, Texas, Connecticut, and Maine.

Preference to domestic bidders when there is no sacrifice or loss of quality with a differential cost preference for in-state bidders, requires state agencies to compare the bid price of in-state and out-of-state bids after reducing the bid price of in-state bidders by a set percentage. This gives a slight advantage to in-state goods, as even if their cost is slightly higher the product could still be chosen. This type of law can be see here in Massachusetts, as state agencies must purchase locally grown or processed food as long as the price of the goods do not exceed more than 10% the price of the non-local goods. Other states with this type of law include Wyoming, Illinois, and Indiana.

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[70] Ibid.

Reciprocal preference laws are when the bid price of out-of-state bids are increased by an amount corresponding to the amount that the competing state accords to its in-state bidders. In other words, the amount of preference a state allocates for in-state bids is equal to the amount of preference applied by the competing state. Additionally, this type of law leads to a preference for in-state bids over bids from states that have a local procurement preference in their own state. A state that has this type of law is Pennsylvania. So, if a state agency in Pennsylvania was looking into purchasing produce from a farm in Massachusetts, they would have to give the Pennsylvania (in-state) produce a 10% price preference over the Massachusetts (out-of-state) produce, as that is what is stated in Massachusetts local procurement laws.

Increasing Institutional Local Procurement Through Small Scale Food Processing

Frequently cited challenges from institutions when it comes to local procurement are seasonality and lack of skilled labor for food preparation. In New England, institutions that are looking to increase their local procurement from local produce purchases run into the issue that the growing season only limitedly overlaps with the school year. Thus, at certain times of the year they struggle to maintain a high level of local procurement. Additionally, many institutional dining services lack skilled labor and equipment to work with produce in their raw state. Thus, they prefer produce that has been pre-washed, pre-cut, and processed.

One solution to these challenges is small-scale local food processing. By purchasing lightly processed and preserved local produce, institutions do not have to worry about skilled labor and having the necessary equipment for working with raw local produce. Additionally, there is increased availability of local produce during non-growing season. One method of food processing which allows for local produce to be used out-of-season is the canning and preserving of local produce. In addition to elongating the life-span of local produce, this practice can help small-to-medium sized farms turn excess harvest into a value added product. Examples of this include turning excess tomatoes into tomato sauce, basil into pesto, or cucumbers into pickles. The term "value added" is enhancing the value of raw materials through a change in their physical state or manner in which the materials are produced.[71] As defined by the U.S. Department of Agriculture, Rural Business Development, value added products are:

- A change in the physical state or form of the product (such as milling wheat into flour or making strawberries into jam).
- The production of a product in a manner that enhances its value, as demonstrated through a business plan (such as organically produced products).

[71] "USDA Value-added Ag Definition," *Agricultural Marketing Resource Center,* Accessed December 12, 2017, https://www.agmrc.org/business-development/getting-prepared/valueadded-agriculture/articles/usda-value-added-ag-definition/.

- The physical segregation of an agricultural commodity or product in a manner that results in the enhancement of the value of that commodity or product (such as an identity preserved marketing system).[72]

Though not abundant, existing literature on value added agricultural products focus on customers' willingness to pay for value added products and the regulatory aspects of starting a value added businesses. Additionally, the literature notes that the creation of value added products can help enhance farmers' income, which can have larger economic impact implications.[73] Regarding customers' willingness to pay, it is found that people are willing to pay more for products that have been locally produced and processed, are organic, or have come from small family farms.[74] Customers find that local value added products are more convenient as they have been pre-processed[75] and have higher quality than conventionally processed foods.[76] Much of the literature focuses on how to start a value added business, as value added products have the potential to increase farmers' revenue. This is done through the addition of value to the product itself, and also through the ability for farmers to sell product for longer periods of the year if the value added product is a processed good.[77]

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[72] Ibid.
[73] David P. Anderson and Daniel Hanselka, "Adding Value to Agricultural Products," *AgriLIFE Extension.*
[74] Wuyang Hu et al., "Consumer preferences for local production and other value-added label claims for a processed food product," *European Review of Agricultural Economics 39,* no. 3 (2012): 489-510.
[75] "Adding Value to Local Food: General Resources for Food Processing Businesses," *NC State Extension,* Accessed December 12, 2017, https://localfood.ces.ncsu.edu/local-food-processing/local-food-value-added-processing/.
[76] David P. Anderson and Daniel Hanselka, "Adding Value to Agricultural Products."
[77] "Adding Value to Local Food," *NC State Extension*.

There are organizations that are experimenting with processing local produce as a technique to increase institutional local procurement. Similar to farmer value added processing, these organizations are taking excess and gleaned produce and creating lightly processed goods to sell to institutions. However, instead of creating products meant for retail, the organizations are processing wholesale products. In addition to utilizing excess produce, some organizations have been working with farms to receive a portion of their harvest specifically for this reason. Examples of organizations performing this type of small scale food processing include the Western Massachusetts Food Processing Center, the Vermont Food Venture Center, and The Farm Bridge. Each of these operations are explored further in Chapter 5.

While there are organizations that are processing local food with institutional buyers in mind, this is a relatively new phenomenon. Thus, the infrastructure to create these programs is lacking, and the equipment needed for these types of programs is very expensive. To encourage the creation of this infrastructure there are federal and state funding opportunities. Potential federal funding sources from the USDA include the Rural Business Enterprise Grants Program, the Business and Industry Guaranteed Loan Program, and the Value Added Producer Grant Program. These programs incentivize the development of food processing centers such as the ones mentioned previously and food hubs to help with the aggregation and distribution of local produce, as well as help

farmers expand their light processing capacity.[78] In Massachusetts, the state farm-viability program incentivizes the construction of on-farm processing facilities.[79] While small scale local food processing can be a solution to farm to institution challenges such as seasonality and lack of skilled labor, more infrastructure needs to be put in place to help scale this up to meet institutional needs.

Conclusion

The literature and research surrounding the topic of farm to institution and institutional local procurement shows us that while many institutions are interested in increasing their local procurement, there are various barriers to making this a reality. The long and complicated process of institutional food purchasing, and whether or not an institution is self-op or managed by a FSMC, can greatly affect what types and what amount of local products and produce an institution can procure. Institutions that are self-op have greater agency over what products are sourced and purchased, whereas institutions that are managed by a FSMC are more restricted to what the management company is capable and willing to do.

While there are restrictions and complications when it comes to local food procurement, there are various movements and laws that are meant to increase the amount of local food sourced. On the grassroots side, there is the Real Food

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[78] Ben Bowell et al., *New England Food Policy: Building a Sustainable Food System.* American Farmland Trust, Conservation Law Foundation, Northeast Sustainable Agriculture Working Group, March 2014. http://www.clf.org/wp-content/uploads/2014/03/1.New_England_Food_Policy_FULL.pdf.
[79] Ibid.

Challenge, which encourages colleges and universities to pledge to source a certain percentage of their food from local/community-based, fair, ecologically sound and humane food sources by 2020, by signing the Real Food Campus Commitment. On the policy side, 37 states have local procurement laws in place, which either encourage or mandate the procurement of local food over out-of-state products for public agencies. For laws that encourage rather than mandate the procurement of local food, there are three different preference categories: 1. Preference to domestic bidders when there is no sacrifice or loss of quality and price is comparable, 2. Preference to domestic bidders when there is no sacrifice or loss of quality with a differential cost preference for in-state bidders, and 3. Reciprocal preference. Massachusetts falls into the second category of preference to domestic bidders when there is no sacrifice or loss of quality with a differential cost preference for in-state bidders.

In addition to grassroots movements and policy geared towards local food procurement, various organizations are working on increasing local procurement through working with small-scale food processing facilities. Currently this infrastructure is lacking, but the construction or expansion of such facilities has the potential to address challenges of local procurement. Small scale local food processing provides institutions with the opportunity to purchase lightly processed and preserved local produce, which means institutions do not have to worry about skilled labor and having the necessary equipment for working with raw local produce. Additionally, there is increased availability of local produce during non-growing season.

It is clear that there is momentum to increase institutional food procurement, and that various types of people and organizations are working on these issues. The rest of this thesis delves deeper into the role that small-scale food processing is playing in the farm to institution movement, and looks at how this role might shift moving forward. This analysis is done through case studies of regional small-scale food processors and a detailed case study of CommonWealth Kitchen.

Chapter 5: Food Processor Case Studies

This chapter presents case studies of three small-scale food processors based in the Northeast. These processors were chosen based off of their location, prominence in the field, and suggestions from farm to institution experts.

Western Mass Processing Facility

Housed within the Franklin County CDC in Greenfield, MA, the Western Massachusetts (Mass.) Food Processing Center was founded in 2001 and has the mission to "promote economic development through entrepreneurship, provide opportunities for sustaining local agriculture, and promote best practices for food producers."[80] Since opening, the food processing center has seen a lot of growth and change, from procuring staff and equipment to expanding its cold, freezer, and dry storage capacity significantly in 2017. When the processing center first opened, it focused on supporting farmers to create value added products from their excess produce, but the organization quickly realized that not all farmers were interested in developing these recipes and being in the kitchen. Due to this realization, the processing center started to move toward local and agricultural based food business incubation, co-packing, and private labeling. In the last 10 years, they took this a step further with the development of the Pioneer Valley Vegetable Venture program.

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[80] "About the Western Massachusetts Food Processing Center." Franklin County Community Development Corporation. Accessed March 13, 2018. http://fccdc.org/food-processing/.

The Pioneer Valley Vegetable Venture program, owned and operated by the processing center, serves as a way to extend the market season for farmers, or as a market avenue for bumper crops, as well as provide access to local food year round. It consists of two tracks: farm to institution and a farmer value added program. With the farmer value added program, local farms can contract with the Western Mass. Food Processing Center to create value added products through light processing such as freezing and canning. Instead of being responsible for recipe development, processing, and packaging, farmers can drop their produce off at the food processing center and pick up the finished product. These frozen or shelf stable products, such as sauces and salsas, are processed and packed, and then can be sold as retail products by farmers at farm stands, in CSAs, or at year-round farmers' markets.

With the Farm to Institution program, the Western Mass. Food Processing Center aggregates, processes, and sells products to anchor institutions. In this case, farmers sell their produce in bulk directly to the food processing center to be processed and sold to institutions. This light processing allows institutions to serve local produce long after the growing season ends. This program has been working closely with farmers, and wholesale and retail purchases "to develop a regional value-chain for frozen and canned produce that offers a fair price to farmers and a competitive price to purchasers."[81] Examples of some finished products include frozen broccoli florets, coined carrots, diced potatoes, applesauce, and tomato puree. The food processing center has worked with just

[81] Ibid.

over a dozen different local farms to source produce. Customers of Western Mass. Food Processing Center processing programs have typically been K-12 schools, but recently the organization has been branching out to hospitals and jails. They have had several hopeful conversations with colleges and universities and hope to grow in that sector in the coming years.

As is a common challenge, the Western Mass. Processing Center has struggled with buyer habits. Things such as price point, distribution challenges, and product quantity have been barriers for institutions to purchase local goods from the processing center. Regarding cost, Joanna Benoit, Food Systems Program Manager at the processing center, notes that there needs to be more education on why local food, specifically locally processed food, has a higher price point. Additionally, regarding product quantity, at the moment the processing center is not looking to replace all conventionally sourced food with locally processed food. Instead it is meant to be a specialty item. However, for some institutions, integrating a specialty item into their purchasing and menus is challenging. The food processing center has viewed this challenge as an educational point. They have used this as a way to start conversations with institutional customers on strategic menu placement and purchasing of local food as a powerful tool to increase local food procurement and impact on the local food system. Another educational point has been on the difference between local and conventional foods. Sometimes local food is less uniform, or a different color than conventional sources, which may be less appealing to institutional buyers. Instead

of letting this derail the success of the program, the food processing center sees this as an opportunity to inform the consumer.

Moving forward, the Western Mass. Food Processing Center is hoping to address some of the challenges they have faced such as cost and quantity with taking steps to expand. To do so, the processing center has expanded storage space, and is planning on purchasing more equipment to make processing more efficient. With more storage space, there is more room to purchase raw produce in bulk and store it before processing, as well as space to store finished product once it is processed. In addition to expanding on-site storage, the processing center has entertained the idea of partnering with a college to acquire more storage space. However, before committing to a partnership, clear boundaries and agreements would have to be in place for the shared space. Regarding equipment, in the past, the processing center has been able to purchase equipment with grant funding from the Local Food Promotion Program through the USDA, through donations, and with funding obtained through fees for services in the processing space.

Vermont Food Venture Center

The Vermont Food Venture Center (VFVC), located in Hardwick, VT, is owned and operated by the Center for an Agricultural Economy (CAE) a 501(c)3 nonprofit founded in 2004. CAE's mission is "to build a regenerative, locally based, healthy food system by engaging the greater Hardwick community through

collaboration opportunities, educational outreach and providing infrastructure."[82] In 2009, the CAE worked with hundreds of local food system participants – from farmers and food businesses to retailers and distributors – to determine goals and objective to advance the local food economy. The food system planning process showed that shared use processing equipment and storage infrastructure, as well as small business development services were a critical next step. VFVC became a shared use food hub and business incubator for small food businesses and farmers, meant to support job creation within the food system. VFVC operates a 15,000 sq. ft. facility with three commercial kitchens (500-600 sq. ft. each) and 5,000 sq. ft. of dry, cold and frozen storage space, and acts as a business incubator and a shared-use processing facility. The organization operates with a fee-for-service business model, and offers member businesses food safety training, technical assistance, and skills-building workshops.

One of the programs that VFVC runs is their Farm to Institution Program, where locally grown produce is minimally processed and sold to institutions. While the VFVC is open to farmers wishing to process and add value to their own produce, it became clear after two years that this was not a service farmers were using. For value added products, either farmers did not want to be the ones in the kitchen processing this product, or their operations were large enough that they were processing their own value added product on their farm. To increase the support for farmers, the staff at VFVC then created a "co-packer" model, in which

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[82] Brooks, Nathaniel. *Business Incubator Builds In-House Wholesale Processing, Featured Facility: Vermont Food Venture Center*. Farm to Institution New England. January 2017.

they were responsible for the processing, and they did not take on the liability for the final product. Once again it became clear that farmers did not want the additional business management of food safety, liability, regulatory relationships and marketing and sales for these value-added products. Ultimately, co-packing was also not a sustainable use of the VFVC infrastructure.

Acknowledging what farmers wanted and what they were capable of, VFVC launched the Farm to Institution program in 2013 that focused on getting minimally processed produce into the institutional market. The driving goals for VFVC were: 1. Farm viability and supporting local farmers, 2. Reaching people through institutions that do not normally have access to local food, and 3. Supporting and growing Vermont's food economy. The first year, VFVC focused on getting their product into K-12 schools. However, it was clear after the first year that this market would not support the program and farmers in the way that they wanted, due to a lack of purchasing power and funding being tied up in federal purchasing protocols. The second year, VFVC focused their energy on colleges and universities, and hospitals as they have stronger purchasing power and are not generally using federal tax dollars and reimbursement programs to fund their food service. This approach worked, and ever since, VFVC has worked with a mix of colleges and universities, hospitals, and even K-12 schools as clients.

The product that VFVC manufactures, named "Just Cut," is minimally processed produce (mainly root vegetables) such as diced potatoes, shredded carrots and sliced beets. While some of this produce is frozen before distribution,

most is distributed as fresh produce. As the produce is cut and delivered fresh, distribution of the product once it is processed must happen quickly, ideally within 4 days. Due to the need for quick distribution, VFVC only works with institutions that are able to bring them on with their distributors, or that have flexibility with VFVC delivering the product through a delivery company that is not a typical food distributor.

As the program is only in its fifth year, the Farm to Institution program is not yet turning a profit; however revenue generated through the sales of the finished product covers the costs of the raw produce, production and processing, packaging, the facility costs, and the cost of the kitchen facility team. In 2018, the program still must subsidize the part-time roles of the sales and production manager. To be sure that the program is operating as efficiently as possible and no money is being lost, VFVC establishes written and signed forward contracts with the 8-10 farmers that they work with that clearly details the amount of produce which will be bought, and the prices and volumes that are needed. These amounts are based on past sales data and projections with their institutional clients for the coming year. Additionally, to ensure that VFVC is not taking on extraordinary risk when bringing on a new institutional client, they make sure that they build those relationships slowly and steadily. This ensures that the institution becomes familiar with the product and understands whether or not they can handle it in their kitchen before making a commitment. Otherwise, there is the risk that when an institution starts by purchasing a large quantity from VFVC with the intention to consistently purchase from them, they ultimately will only do this once as they

are unfamiliar with the product. To also address this complication, VFVC provides technical assistance for institutional kitchen crews so they know how to cook with their product. Currently, VFVC works with over 30 different institutions.

The Farm Bridge

Unlike the Western Mass. Food Processing Center and VFVC, the Farm Bridge is a for-profit food processing company located in New York's Hudson Valley. While nonprofits and for-profit businesses face their own unique challenges and can be difficult to compare, there are lessons that can be learned from both experiences. The Farm Bridge's mission is "to support local farms by building a profitable local food company that will provide the stability, infrastructure and expertise to create a vibrant local food economy."[83] The company is a B-Corporation (B-Corp) under New York State, meaning that while the company is a for-profit business, their work has a positive impact on society.

The Farm Bridge is owned and operated by Jim Hyland and has been in operation for just about a decade. It operates as a co-packing facility and a processing facility for farmer value added products and institutional products. It houses a 30,000 sq. ft. kitchen, 8,000 sq. ft. of cold, frozen, and dry storage, and has dedicated processing lines for sauces, pickles, individually quick freezing (IQF), roasting, and handmade products. The Farm Bridge mostly process

[83] "About Us," The Farm Bridge: Bring the Harvest Home, Accessed April 15, 2018, http://thefarmbridge.com/.

products for private companies and private colleges, but has found private companies easier to work with. If a private company likes a product, they just purchase it; however working with private colleges can be difficult for various reasons. For colleges that contract with a food service management company, college administrators hand over their buying power to the FSMC and unless the administrators and students are pushing for local procurement, FSMCs will operate within the typical distribution field. While self-operated colleges are a bit easier to work with, there still needs to be someone at the college who is pushing local procurement. If a local producer or processor is able to find a college with someone who is passionate about local procurement, there is the chance that when that individual leaves, the institution will no longer view local procurement as a priority. Beyond private companies and colleges, Jim noted that working with institutions such as secondary schools, prisons and healthcare facilities was incredibly difficult.

The work that the Farm Bridge does as a co-packer is with small-to-medium sized businesses such as Super Seedz and Bobby Sue's Nuts to process and package their product for retail sale. Other products that are produced include sauces, soups, and pickles. In addition to co-packing, the Farm Bridge works with local farmers to create value added products as well as institutional goods. Regarding the value added products, the Farm Bridge used to create value added products for local farmers such as sauces, frozen vegetables, and pickles. However, working with small farms makes up such a small portion of their clients and while the Farm Bridge continues to work with them, it is more on a mission

than business basis. The Farm Bridge tries to focus energy into larger accounts such as co-packing operations and working with larger regional farms to process food for schools, hospitals, and large organizations. The work that the Farm Bridge does with farmers includes freezing local produce for local CSAs and retail operations, as well as utilizing this local produce to process frozen and shelf-stable products in bulk sizes for institutional purchasing.

The biggest challenge for the Farm Bridge has been funding and getting commitments from the buyer side. As they are a small-scale processing operation, the cost of their product is still no match for processed food within the conventional food system, and to come closer to this price the company needs to scale up. However, there is a lack of funding, especially for for-profit companies. So far, loans and state financing has been extremely helpful to the Farm Bridge, but this financing has not amounted to enough money to expand and scale up the processing facility.

Lessons Learned

While each of the organizations in these case studies have their own unique missions and goals, and one is a for-profit versus being a nonprofit, they all saw the work that they were doing as a way to promote regional economic development. Through the development of food-processing infrastructure, they were able to extend the market season for farmers, as well as increase the amount of local produce available for institutional procurement. Each small-scale food processor also experienced similar challenges. These challenges include

struggling with buyer habits (i.e. price point, distribution challenges, product quality and quantity), and accessing consistent funding. Another similar challenge between the three organizations is that they have all struggled to get commitments from the institutional buyer side. While this is not a surprise, it is a great challenge, as the demand from institutions is necessary to keep operations like these afloat.

Institutional buyer habits were a substantial challenge for these small-scale food processors. Buyer habits include buyer and organizational culture, institutional structures, and economics. Buyer and organizational culture play a big role in buyer habits, as this culture refers to the differences between the culture around conventional food procurement, and the culture within alternative food procurement. Differences in culture include priorities when it comes to procuring food (i.e. prioritizing the purchasing of local products vs. purchasing the cheapest option) and food procurement logistics (i.e. willingness to work with outside vendors and distributors vs. inflexibility when it comes to alternative logistical operations).

Institutional structures refers to the staffing of university dining services, contracts, and partnerships, and how these structures can affect how a buyer goes about procuring food. Institutions that operate within the conventional food system focus on efficiency and rarely stray from their typical operations. Additionally, these institutions operate with a shorter and more streamlined purchasing and procurement timelines, which makes it difficult for institutional

buyers to work with local food processors, where these streamlined operations are not yet set up.

The challenge of working with institutional buyer habits is something that these small-scale processors are still working on, but one way they are addressing these challenges is finding ways to limit their risk. While each strategy was unique, each organization noted that they were strategic about the partnerships they entered or were planning on entering. As the Western Mass. Food Processing Center looks to expand, there is the potential to partner with an anchor institution to utilize storage space that they have. However the Western Mass Food Processing Center wants to be cautious about any partnerships and be sure that all guidelines are clearly spelled out before entering anything. For the VFVC, they minimize risk through signed forward contracts with farmers and working with institutions to slowly incorporate their products into their menus so that they do not become overwhelmed. At the Farm Bridge, co-packing for private companies makes up a large part of the work, as this type of work helps keep the operation running.

Another similarity in these case studies is that each food processor started out with creating a farmer value added program. They each quickly realized that while farmers are interested in the finished product, they are not so interested in the time and energy it takes to create these products, and the majority of farmers would rather be farming than in the kitchen. It was clear to each organization that it was not worth it to expend their energy on a farmer value added program, and while some still create value added products for farmers, this is not a large part of

the work they do. Instead, they all focused on how to work with farmers to create wholesale products that could be sold to anchor institutions, as this provides both the farmer and food processor with greater, steadier business. Additionally, there is a larger impact on the regional supply chain than through smaller retail value added products.

Chapter 6: CommonWealth Kitchen Case Study

This chapter provides a detailed case study CommonWealth Kitchen (CWK), Boston's small-scale food processor that is doing work in farm to institution. This is one of the first detailed reports of CWK's small-scale food processing program. Information for this case study was gathered through interviews with CWK staff, in-house materials, and online web sources. This case study helps situate CWK's role in farm to institution, allows for examination of the challenges and opportunities within this program, and lends itself for comparison to other small-scale food processing programs in the region

Small-Scale Food Processing at CommonWealth Kitchen

Best known for their work as a food business incubator and shared kitchen facility, CWK is a nonprofit located in the Dorchester neighborhood of Boston, MA. Being located in Dorchester, a racially diverse neighborhood of Boston, CWK primarily targets business owners who are women, immigrants, and people of color. Their vision is that "an equitable and resilient local economy requires closing Boston's growing wealth divide by promoting inclusive entrepreneurship and creating sustainable employment, with a focus on people who have been impacted by racial, social and economic inequality."[84] The organization works to fulfill this vision through their mission of creating a "collaborative community, providing shared kitchens combined with business assistance to help aspiring

[84]"Vision/Mission," CommonWealth Kitchen, Accessed March 13, 2018. http://www.commonwealthkitchen.org/about.

entrepreneurs build great food companies, create jobs, improve healthy food access, and strengthen our regional food economy."[85]

As a food business incubator, CWK provides support for food entrepreneurs to grow their business through technical assistance, business support, and shared kitchen space. CWK offers additional assistance such as helping member businesses scale their recipes, apply for health permits, and develop product labeling. Through incubation, member entrepreneurs turn their ideas into businesses that offer locally produced food products for sale. While CWK has traditionally operated as a kitchen incubator and shared kitchen facility, over the past few years they have started to expand into small-scale food processing. This new venture into small-scale manufacturing has three aspects:

1. *Supporting small food businesses*: CWK is using this as an opportunity to help their member food businesses scale up and access more markets, which increases their partnership opportunities and revenue.
2. *Supporting CWK's work and creating jobs*: When not providing contract services for members, CWK can generate a source of additional earned income through their own contract manufacturing which helps support their operations. Additionally, this aggregates work, and turns part-time and seasonal work into full-time employment. Furthermore, through these strategic partnerships, CWK is able to connect member businesses to more sales opportunities.

[85] Ibid.

3. *Regional food systems change*: Small-scale food processing provides the opportunity to work with local farms and institutions to decrease harvest surplus waste and increase the amount of local produce served in nearby institutions.

The Start of CWK's Small-Scale Food Processing Program

CommonWealth Kitchen began their foray into small-scale food processing in 2016. Through various grants from the United States Department of Agriculture (USDA) and the Massachusetts Department of Agricultural Resources (MDAR) that focused on farm to institution and small-scale food processing, CWK was able to purchase equipment and hire staff to help with developing a commissary kitchen in addition to their shared kitchen space. While farm to institution was a focus point of their small-scale food processing, CWK also wanted to utilize these funds to help develop co-packing for member businesses and a farmer value added program.

Co-Packing for Member Businesses

Supporting their member businesses is CWK's first and foremost goal. Many of these businesses are looking to expand; however they often end up in a tricky place where they are starting to grow out of CWK's shared kitchen space, but are too small to contract with a mid-large scale co-packer. CWK's small-scale food processing program provides the opportunity for their member businesses to

begin to scale up, without having to commit to larger production. Co-packing currently makes up about 40% (by revenue) of CWK's production runs.

Farmer Value Added Program and Farm to Institution

When not providing contract services for their member businesses, CWK works with local farms to create value added products from surplus harvest. For many farmers, crop yield can be unpredictable, and at times high crop yield does not overlap with high demand. For farms that have a large surplus supply later than expected in the season, this creates two issues: one, farmers see a decrease in profits because they were not able to sell their crops when demand was high and two, there is a surplus of produce that becomes "wasted." To address these issues and help farmers pull in an extra income while also decreasing their surplus harvest, CWK has started a farmer value added program. Through this program, CWK takes fresh surplus product and turns them into shelf-stable and frozen products that can be sold at farm stands, CSAs and other retail outlets.[86] Examples of farmer value added products include marinara sauce, apple sauce, pickles, salsa, and pesto.

In addition to farmer value added products to be sold for retail, CWK utilizes their relationships with these local farms to acquire gleaned and surplus harvest for the farm to institution arm of their small-scale food processing programs. The first tangible work that was done in this regard was the 2016 Tomato Project that CWK completed for Northeastern University Dining

[86] "CommonWealth Kitchen Farmer Value-Added Program," CommonWealth Kitchen, 2018.

Services. Conceptualized in the Spring and executed in the Summer of 2016, CWK developed a recipe and then produced sauce from diced tomatoes gleaned from Davidian Farm (sourced by Red Tomato), that was then sold to Northeastern via their food service management company Chartwells. This local marinara sauce was then showcased on Northeastern's Fall menu in their residential dining halls.

While CWK prefers to get produce that is planned in partnership with local farms, gleaned, or is surplus, they need to provide contract manufacturing to these institutions year round in order to make this a viable businesses mode. This means that at certain times throughout the year, the products that CWK is processing are locally manufactured but do not feature locally grown produce; rather they are bought from a food distributor that could be purchasing the fruits and vegetables from anywhere in the country. However, the order of preference for produce acquisition is 1. Locally gleaned produce (it is generally cheaper, but supply can be unpredictable), 2. Produce from current farm partners that CWK is working with on the value added program and lastly, 3. From a small-scale local aggregator or distributor such as Red Tomato.

CommonWealth Kitchen and Farm to Institution Partnerships

As small-scale contract food processing at CWK is in the nascent stages, consistent partnerships with anchor institutions are still being formed. To date, CWK has worked with and developed products for Northeastern University,

Harvard University, Massachusetts Institute of Technology, Lesley University, Emmanuel College, Boston Children's Hospital, and Boston Public Schools.

As previously mentioned, the first concrete farm to institution work that CWK did was in 2016, when they produced around 15,000 gallons of local crushed tomatoes for Northeastern. In 2017, CWK's farm to institution work continued, and in February they processed 1,050 pounds of local, surplus sugar pumpkin puree for Harvard Dining. Later that year, in December, CWK processed 655 16oz jars of local, surplus applesauce for Boston Children's Hospital. It was in 2018 when farm to institution processing at CWK really picked up. In January 313 gallons of local, surplus apple sauce was processed for Boston Public Schools (BPS), and in February 270 pounds of muffin batter made with local, surplus apples and local, surplus squash was processed for MIT and Lesley. Most recently, in March 2018, CWK processed 450 gallons of local, surplus butternut squash soup for BPS, 250 pounds of local, surplus squash puree, 120 pounds of local apple muffin batter, and 500 vegan eggplant meatballs for Emmanuel, and 4,800 vegan eggplant meatballs, 3,600 churros, and 500 pounds of frozen apple crisp for Harvard (a timeline of this work can be found in Appendix D).

These partnerships have included case-by-case agreements, short-term contracts, and long-term partnerships. Out of these opportunities, CWK's partnership with Harvard has been the most formalized and currently the organization holds a 10-week contract with the university, with the hopes of continuing this partnership once that contract is up.

Partnership with Harvard University

As previously mentioned in Chapter 4, Harvard University has self-operated dining services for the undergraduate dining halls, meaning they have more flexibility when it comes to procuring local food. While they still have to work within their distributors guidelines, they have more direct contact and leverage with them and as a large client they are able to request special orders that a FSMC might not want to do. Thus, Harvard has been one of the institutions that CWK has worked closest with.

CWK's partnership with Harvard occurred organically. The two crossed paths and saw the potential that a partnership could bring. CWK was looking for institutional partners for their new small-scale manufactured products and Harvard was looking for ways to increase their local procurement and support local businesses. At first, the relationship with Harvard started between CWK member businesses selling products to Harvard for special meals and events, and eventually after realizing it was difficult for CWK member businesses to scale up to Harvard's needs on an ongoing basis, expanded into Harvard committing to purchase a certain amount of product from CWK's commissary kitchen from the institutional procurement program.

In February of 2018, CWK finalized their first formal contract with Harvard. Up until then, the institutional food processing that CWK has been doing for Harvard was on a case-by-case basis. In February 2018, Harvard placed an order for several of CWK's commissary products over the course of the rest of the Spring semester, approximately 10 weeks. While Harvard met with CWK

directly, they are not buying product directly from them. Instead, they were able to convince their distributor, Paul Marks, to add CWK as a vendor. Paul Marks acts as a middleman and places an order with CWK and then sells it to Harvard at a higher price to cover the cost of picking up the order from CWK, sorting it at Paul Marks warehouse, and delivering it across several locations on the Harvard Campus on an as-needed basis. CWK and Harvard's relationship continues to grow, with the potential of longer-term permanent contracts.

Partnership with Bon Appétit Management Company

Bon Appétit Management Company (BAMCO) is a FSMC that contracts with various institutions in the area. They service higher education (40%), business and industry (40%), and specialty and museums (20%).[87] BAMCO is unique from other FSMCs as it has a company commitment to source 20% of their products locally. For the company, local is anything within a 150 mile radius from where they are operating. Due to the company commitment, contracts are made with institutions that are interested in sustainability and sourcing locally. In the case of higher education institutions, each university that contracts with BAMCO is provided with a BAMCO staff member who is in charge of food procurement and is placed at the school. Additionally, there are several other staff members at each school that work on operations, marketing, and various other roles.

[87] Elaine Smart, interview by Laura Flagg, January 25, 2018.

In February 2018, CWK held a private tasting of their institutional commissary products for BAMCO. In attendance were BAMCO food procurement staff for the Massachusetts Institute of Technology (MIT), Lesley University, and Emmanuel College. Out of this tasting, CWK secured one-time orders with MIT, Lesley, and Emmanuel. As CWK is not on the preferred vendor list for BAMCO, their product cannot be distributed to these institutions through their typical vendor, so BAMCO is picking up the orders from CWK and paying by credit card. Both CWK and BAMCO acknowledge that this is not a sustainable model, so as their relationship grows CWK is looking at ways to connect with BAMCO's preferred distributors.

Challenges of Small-Scale Food Processing

Being a new program, there are bound to be challenges during program development. In discussion with CWK staff, the biggest challenges that have arisen out of their small-scale food processing program have been buyer habits vs. CWK's capabilities, product development and associated risk.[88]

Buyer Habits vs. CWK Capabilities

Buyer habits (i.e. buyer and organizational culture, institutional structures, and economics) have been one of the main challenges for CWK. Specifically institutional purchasing and procurement timeline and price sensitivity have been difficult for CWK to manage. Typically, buyers are used to purchasing products

[88] Mia Cellucci and Adam Scipione, interview by Laura Flagg, March 12, 2018.

that are readily available and currently in inventory, which means that they are not used to committing to a product weeks or months in advance. They are less comfortable with buying products specifically developed for them. As can be seen in Figure 2, the process with CWK varies considerably, with a typical timeline taking around 1-2 months. However, after a partnership is formed, the process can happen as quickly as 3 weeks or take up to 2.5 months, depending on when an order is placed, how larger the order is, CWK's production schedule, and the type of product that is being made (it takes longer if the product is new to CWK and requires recipe scaling and other adjustments).[89]

[89] Mia Cellucci and Adam Scipione, e-mail message to author, March 13, 2018.

Figure 2: The Pathway of Institutional Contract Manufacturing at CommonWealth Kitchen

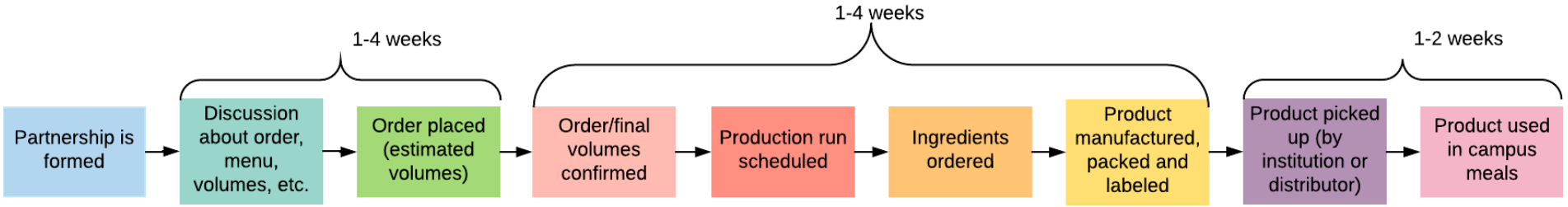

Figure 1: The Pathway of Institutional Contract Manufacturing at CommonWealth Kitchen

The pathway of institutional food processing at CWK starts with forming a partnership between CWK and a local institution. Once this partnership is formed, CWK and the institution meet to discuss the specific needs of that institution, what products would do well on their menu, what volume of product they need, and when they need it by. Once this conversation happens, the institution places an order with their estimated volumes. This process of meeting, discussion, and order placement takes around 1 - 4 weeks. Next, the institution confirms the final volume of product needed, CWK schedules production and orders ingredients, and the product is manufactured, packed, and labeled at CWK's facility. This process takes another 1 - 4 weeks. Once the product is finalized, it is picked up by the institution, or the distributor they work with, and is distributed throughout the institution's kitchens and food service locations to be used in institutional meals. This last part of the pathway takes about 1 - 2 weeks.

In addition to challenges with working with typical institutional procurement timelines, economics has been a challenge for CWK. Price sensitivity and willingness to pay are buyer habits that are difficult to overcome as food procured through the conventional food system is much cheaper than locally grown and processed food Institutional buyers are used to certain price points, and typically CWK's price points are higher, due to the scale and overhead of CWK's food-processing operation.

Product Development

When it comes to product development, CWK finds themselves in a "chicken or the egg" situation. They want to align their capabilities with what there is a market for and what buyers are interested in. While CWK is flexible in the types of product they can create, they have to make products in an efficient and compatible way. The organization runs into the question of: do we develop products we know can be made in an efficient way and then market them to institutions, or do we work with institutions to develop products they need and then figure out how to make them in both a cost and time-efficient way?

An example of CWK first developing a product and then marketing it to an institution can be seen with the applesauce. It is relatively easy to source and store apples, and CWK has found a way to process them efficiently. In addition to the efficient process, CWK has found some buyer interest in this product. However, with the development of other products that CWK is not as familiar with, the sourcing and storage process can be difficult due to price and logistics,

and it takes time to find a way to process this food in an efficient way. For example, when developing an unfamiliar or buyer-requested product, CWK faces the challenges of developing an efficient production process using the equipment and set up they have, sourcing new ingredients and packaging, and developing a suggested preparation and cooking method for institutions for the final product. This can be seen with the apple crisp product that CWK developed after Harvard expressed their desire for such a product. Based on their needs, CWK took their concept and prototyped it in the kitchen, worked out feasibility and pricing, and refined and finalized the product. Finalization of the product included packaging, ingredient lists, label design, and preparation instructions. In some cases these challenges can be even trickier as CWK sometimes does not have ideal equipment for the product and/or ingredients involved, which makes the process more inefficient and expensive.

Associated Risk

CommonWealth Kitchen's role is in between farms and institutions looking to procure local food, and due to buyer habits and the process of developing a product they are currently shouldering a lot of financial risk when it comes to their small-scale food processing. Previously mentioned buyer habits create a level of instability that CWK must work with, both on the side of getting produce from farms and confirming contracts with institutions. As could be seen in Figure 2, it can take anywhere from 3 weeks to 2.5 months to plan and execute a production run. Inconsistency in time from production run to production run leads to great instability for CWK. Furthermore, this product run is based on a

previously agreed upon (but not contracted) volume between CWK and an institution. However, as buyers are not used to committing to a product months or weeks in advance, there is the chance that they could change the order volume close to the production date and long after the production schedule has been confirmed. This can leave CWK in the lurch as it can change the amount of workers and work hours needed, it can leave them with an excess of product from a farm that they are responsible for.

Moving Forward

As their small-scale food processing program grows, CWK must revisit the intentions they set at the beginning of this venture. While the contract manufacturing with member businesses and to an extent, the farmer value added program align with CWK's mission, the farm to institution arm of their small-scale food processing is challenged with finding the right fit. The amount of energy, time and resources that CWK will need to invest to make this a viable program means that CWK must think strategically while they grow this program.

Chapter 7: Analysis and Discussion

The following themes emerge from the literature reviewed and interviews conducted for this project: challenges with food processing in farm to institution, impacts of local procurement laws and policies, cross-sector partnerships, and reframing the conversation around farm to institution.

Challenges with Food Processing in Farm to Institution

The challenges of farm to institution have been studied extensively; however, the focus of these studies has been the procurement of local produce rather than locally processed foods. In some cases, the challenges of locally processed foods in farm to institution are similar to those of local produce: distribution, cost, and supply of production. However, there are also some unique challenges such as buyer habits, funding, and scaling up.

Similar to procuring local produce, distribution is a big challenge for locally processed products as most local artisans or small-scale processors do not have access to typical distribution channels. Distributors often find these processors too small to take on as a regular vendor, and in the case that they do on-board their products they often put a premium on local products. Additionally, considering the number of distributors, even if a processor is able to get their product on a vendor list, that distributor most likely does not work with all of the institutions in the area. While there may be some overlap of distributors between institutions, there is the chance that each institution a processor would want to

work with could use a different distributor. This presents a challenge for both the processor and the institution, as it takes a lot of time and energy to figure out purchasing and distribution on a case-by-case basis. For many institutions, this is a big enough deterrent to choose the conventionally processed product over the locally processed product.

Cost and pricing is a challenge for both local produce and processed food. However, for locally processed food there are unique challenges such as higher price differences between conventionally processed food and locally processed food than between non-local produce and local produce. While not always the case, local processors often utilize local produce which also makes the end product higher in cost than a conventionally local process. Additionally, as these processors are functioning on a small scale, their operating costs are higher. This creates a difficult cycle to break as small local processors must then price their goods at high prices, making it so that buyers will more likely purchase the conventionally processed product. Without a steady stream of customers, small local processors are unable to lower their costs, and thus the cycle continues. One solution to this challenge that was mentioned during interviews was for institutions to treat locally processed food more as a commodity than a specialty item, and for institutions to come together to perform their own group purchasing. For example, instead of purchasing local goods on an individual case-by-case basis, a group of institutions should commit to purchasing a certain amount of a product that they regularly use on their menu (i.e. crushed tomatoes or applesauce). This would provide a steady stream of customers for the food

processor and could potentially lower their operating costs, and thus lower the price for buyers.

As was mentioned in Chapter 4, locally processed food can help solve the seasonality issue of farm to institution by extending the season of fresh local produce. However, there is still the question of whether there is enough volume of this good for potential buyers. This challenge goes hand-in-hand with the issue of buyer habits. Institutions are typically used to working with distributors that have inventory stocked, so all they have to do is place an order without much planning. When working with small-scale processors, however, requires a bit more planning and effort to ensure that there is enough supply to meet the demand. This process can be seen in the pathway of institutional food processing at CWK (Figure 2, Chapter 6), where discussion about the order, menu and volumes, and order placement take about 1 - 4 weeks. This time of 1 - 4 weeks is much longer than the typical purchasing process, which could potentially happen within one day due to comprehensive ordering systems provided by mainstream distributors. This greater amount of effort required to ensure that there is enough supply, coupled with higher prices for locally processed goods, leads to a lack of commitment from buyers. As was noted in the CommonWealth Kitchen case study (Chapter 6), this lack of commitment places a large amount of risk on the small-scale processor in terms of time, resources and money—risk that a small-scale processor cannot afford to take on.

Funding for capital investments in equipment and infrastructure is also a great challenge with small-scale processing in farm to institution as there is not

much existing funding for expanding infrastructure, and there is great competition for the funding that is out there. While funding to develop food processing centers and purchasing initial equipment exist,[90] funding to expand such operations past an initial phase is difficult to come by. It is expected that processing facilities will eventually cover their operating and expansion costs through the revenue they turn. However, due to complexities of scaling up that were previously discussed, many of these operations are in this middle stage where they are too large to receive start-up funding, and they are not large and efficient enough to turn a profit to support their full operations.

Furthermore, it seems that existing funding for farm to institution goes towards research rather than practice, and this research often focuses on the challenges and opportunities of farm to institution, that are well known. Regarding competition for funding, there are tensions over funding for for-profit versus nonprofit enterprises, specifically over whether the funding should be used to invest in and expand existing infrastructure or for creating new infrastructure. Essentially, there is the need for more, better and diversified funding.

The last challenge that was mentioned in the interviews, and one of the most complicated, is the issue of scaling up. Small-scale processors need to scale up to take full advantage of the opportunities, meaning that they need to purchase all of the necessary equipment, potentially expand their facility, and find a steady

[90] The Western Massachusetts Food Processing Center received grant money from the USDA to purchase processing equipment and CommonWealth Kitchen received funding from the USDA and MDAR to purchase processing equipment and develop their institutional contract manufacturing program.

stream of customers to regulate their operating costs. However, for many, this process is a "chicken or the egg" situation. In many cases, the processor needs a steady stream of income to scale up and bring the product costs down to a reasonable price for institutional buyers; however this cannot happen until the processor has a steady stream of committed institutional buyers. Though, as has been noted previously, institutions will not commit to large purchases of locally processed food due to price and other various reasons. Hence, the "chicken or the egg" situation. To break this cycle, it has been noted that it will take an institution to fully commit to this process with a small-scale processor, while understanding the risks, or for more funding to become available to support facility expansion and upgrades. For small-scale processing to have a greater and more consistent role in farm to institution, it is necessary for them to scale up and operate at full potential.

Impacts of Local Procurement Laws and Mandates

As seen in the literature, local procurement laws are utilized to encourage public institutions to prioritize local food procurement and 37 states have implemented such laws.[91] Here in Massachusetts, the local food procurement law (Chapter 7 Section 23B) is a preference law rather than a target law, thus there is no requirement to purchase local food. Additionally, preference laws may be inadequate when the price difference between conventionally processed food and locally processed food is typically more than 10 percent, the current preference

[91] Harvard Food Law and Policy Clinic, "Tools for Advocates."

threshold written into Massachusetts law.[92] Often the difference between the two is more than 10 percent due to factors such as the use of local produce and operational costs of small-scale facilities. For these reasons, while preference laws show good intent, they are often found to be ineffective.

One policy recommendation that has been explored is how to rewrite this policy so that it is a target law and a mandate for public institutions to purchase a particular percentage of local food by a certain date. For example, in Illinois the local procurement law sets a target that "20% of all food and food products purchased by state agencies and universities shall be local farm or food products"[93] by 2020. However, as was heard during interviews for this thesis, even with stronger laws there are issues such as alignment with other laws and enforcement. In some cases, local procurement laws are in opposition with federal laws.[94] For example, Massachusetts public schools that receive both state and federal funding run into contradictions between state and federal laws. According to Massachusetts state law, schools can purchase up to $35,000 of product directly from agricultural producers without having to go out to bid,[95] however this conflicts with a stricter federal procurement regulation that says public schools must conduct a bid process for purchases over $3,500.[96] Regarding enforcement, many interviewees noted that as the current preferential law is not monitored nor enforced, they are skeptical as to how and if a mandated target law would be

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[92] Jim Hyland, Interview by Laura Flagg, March 21, 2018.
[93] Harvard Food Law and Policy Clinic, "Tools for Advocates."
[94] Simca Horwitz, Interview by Laura Flagg, January 31, 2018.
[95] Mass. General Laws, Chapter 30B, Section 4.
[96] "Decision Tree: How Will You Bring Local Foods into the Cafeteria with Your Next Food Purchase?" *United States Department of Agriculture,* August 2017.

enforced. Additionally, local procurement laws would have no bearing on the procurement processes of private institutions (including college, universities, and hospitals), where account for a large portion of institutional food purchasing. Essentially, while policy demonstrates a spirit of commitment, most interviewees did not see it as being particularly useful in this sector.

Although interviewees were skeptical of policy impact, Elaine Smart from Bon Appétit Management Company (BAMCO) noted the impact that *company mandates* can have. BAMCO's purchasing must meet a companywide mandate to purchase 20% local. In addition to this local purchasing mandate, with local being defined as a 150 mile radius from where BAMCO is operating, purchases from small to medium sized farms are encouraged. Small to medium sized farms are those that are owner-operated and have sales below $5 million dollars. While this company mandate has helped push BAMCO to be a company committed to purchasing locally, Elaine notes that it can be difficult for some accounts to meet the 20% local target due to well-known challenges such as seasonality. Initially this 20% was mostly made up of local produce, but then expanded to include meat, eggs, cheese, dairy and crafted goods. Elaine noted that locally processed food could assist BAMCO in reaching their 20% company mandate.

Cross-Sector Partnerships

One of the biggest themes that was apparent from the interviews was the need for more and better cross-sector partnerships. Throughout the interviews cross-sector partnerships were spoken about as a way to increase the sharing of

information by groups within the sector, aggregate procurement power to shift the supply chain, and begin to develop a regional supply chain.

While there are many doing work in the farm to institution world, there is a surprising lack of cross-sector partnerships in this work. While the literature does not frequently discuss cross-sector partnerships, this is something that was raised several times during expert and key informant interviews. As was noted numerous times throughout the interviews, cross-sector partnerships can be very important because partners such as institutions, food processors, and food justice advocates are coming at the issue from different angles, but in aligned ways. Simca Horwitz, Co-Director for Massachusetts Farm to School emphasized how important it is for big players in the industry to come together as a unified voice and work to increase local food procurement in institutions. Jennifer Obadia, Eastern U.S. Regional Director for the Healthy Food in Health Care Program for Health Care Without Harm echoed this sentiment and noted a cross-sector group made up of hospitals, K-12 schools, colleges and universities, and government entities that Health Care Without Harm was facilitating. In New England, the group is made up of twelve institutions, half of which are hospitals and half of which are K-12 schools, colleges, and government entities. Jennifer mentioned that this group was looking into infrastructure gaps in farm to institution, and was building off of similar work done by Health Care Without Harm staff in the Bay Area of California. The working group in California started about three years ago and is currently working on constructing a meal processing plant that will be working with Kaiser Permanente.

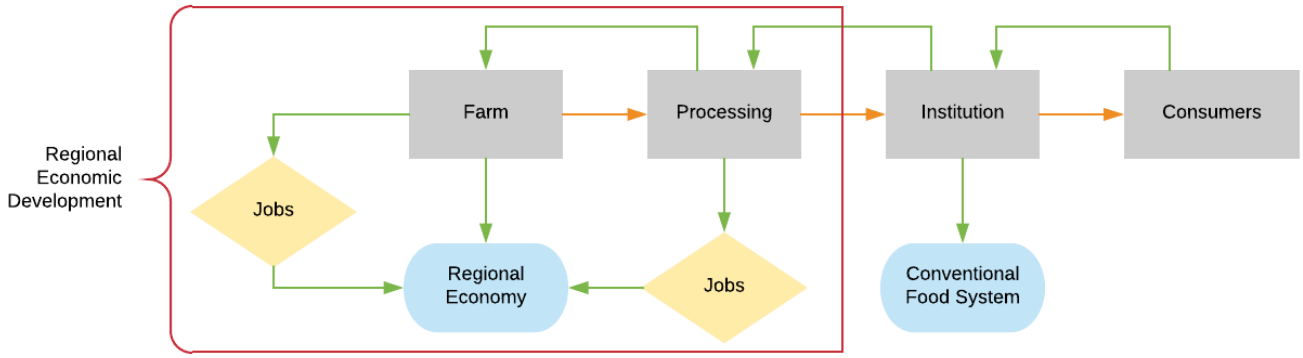
While these types of groups are necessary and doing great work, it was noted that more diverse partnerships can be created. Many interviewees noted that distributors and food service management companies are often left out of the conversation. Moving forward, these stakeholders need to be at the table as they are the ones purchasing and physically moving food from aggregators, hubs and processors to institutions. Through strengthened cross-sector partnerships there is the potential to shift the current supply chain and move towards the development of a regional supply chain. By aggregating procurement power from the full network and communicating this demand for local products as a unified front, distributors and food management companies are more likely to engage in local procurement. While there are groups already hoping to shift the current supply chain, such as university students, partnerships that incorporate various players in the industry, specifically institutional procurement staff, have the potential to have great impact.

Reframing the Conversation Around Farm to Institution

The conversation around farm to institution has typically been framed around how to get local produce to institutional markets and the benefits that farm to institution can have on the food system. Benefits typically acknowledged are increasing the knowledge of and access to local fresh foods and healthy eating, decreasing harvest waste which would otherwise become food waste, and creating close relationships between farmers and consumers. Benefits to the local economy are also noted, yet these are not as often discussed. And again, the economic

impact is commonly spoken about in terms of supporting local farmers. While all of this is accurate, it was a common theme among the interviewees that the narrative must shift to more greatly emphasize the economic impact that farm to institution can have on the local and regional economy.

Figure 3: Product and Capital Flow in Farm to Institution



(Orange arrows=product flow, green arrows=capital flow)

Figure 3: Product and Capital Flow in Farm to Institution

Farm to institution has impacts on the regional economy through import substitution and the multiplier effect. Import substitution refers to the idea of replacing imported goods with ones that are produced locally or regionally, and the multiplier effect is the idea that the purchase of local products begins the circulation of money that is kept circulating within a region as opposed to flowing out of a region. This can be seen in the way that the dollars from institutional purchases flow to local aggregators and small-scale processors, to local farms, and then are circulated back into the local economy through job creation and local spending. Figure 3 demonstrates capital flow, as well as product flow, in farm to institution. The orange arrows show product flow, with produce that is grown at

local farms first sold to processing facilities, who then sell lightly processed goods to institutions, who then distribute this local good to consumers. Capital flow can be seen by the green arrows. Capital flow in the conventional food system can be seen on the right side of the diagram, with capital leaving the regional economy and being funneled into the conventional food system. Capital re-entering the regional economy can be seen in the left side of the diagram, with the arrows that flow within the red box. This capital flow starts with money flowing from the consumer to the institution to the processing facility and then to the farm. These dollars are circulated into the community both through purchases the farm has to make to grow their crops and maintain their operations, as well as through the good local jobs the farm and processing facility creates. Those workers then support the local economy by spending their money locally, which helps continue this cycle and local economic growth.

This model assumes that farms and processing facilities are providing good jobs and hiring locally, that farms are making local purchases to support their business, and that the workers at these farms and processing facilities are spending their money locally. Various economic impact studies have quantified this effect. It is estimated that for every $1 spent locally, another 40 cents to $1.60 of local economic activity is generated.[97] In 2015 it was estimated that local food purchased by Vermont K-12 schools contributed $1.4 million to the state's economy.[98] Additionally, the purchase of local food leads to job creation, with

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[97] "Farm to School Rocks," *Farm Aid,* Accessed April 5, 2018, https://www.farmaid.org/blog/farm-to-school/download-farm-school-rocks-pdf/.
[98] Ibid.

studies indicating that nearly 32 jobs are created for every $1 million in revenue generated by local farms, compared to only 10.5 jobs for wholesale farms.[99]

While job creation is viewed in a positive light, it is important to distinguish the types of jobs that are being created and the difference between jobs and good jobs. Good jobs are typically defined as jobs that pay a living wage and provide benefits, training, safe working environments, and career advancement opportunities. It is crucial to examine the types of jobs that are being created in this new wave of small-scale food processing and ensure that employers are not only providing local job opportunities, but ones that are considered good.

In addition to reframing farm to institution, the idea of processed food needs to be reexamined and reframed. The narrative that processed food is bad and fresh food is good makes it so locally processed food is seen as a step below locally grown fresh produce. This narrative needs to shift if locally processed food in farm to institution is going to meet its full economic potential. Additionally, the focus of research must shift from studying what challenges and opportunities small-scale food processors face within the farm to institution movement to honing in on these challenges and offering solutions. As the challenges of small-scale food processing in farm to institution become more clear, the focus moving forward should be on those who are already doing this work and how they can be supported.

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[99] "The Economic Impact of Locally Produced Food," *Federal Reserve Bank of St. Louis,* December 5, 2017, https://www.stlouisfed.org/on-the-economy/2017/december/economic-impact-locally-produced-food.

Chapter 8: Recommendations

Local small-scale food processing can be a way to fill gaps within the farm to institution movement. It addresses challenges of seasonality and lack of skilled labor and facilities to work with whole produce. However, it is clear that it has the potential to be much more than that and could be used as a way to shift markets to be more local and to strengthen regional food systems. To do this, one strategy that was mentioned several times throughout the interviews was the need for cross-sector partnerships and the voice of everyone at the table. Thus, the following recommendations are meant to inform multiple stakeholders in the farm to institution movement such as policy makers, funders, researchers, and all of those along the supply chain.

The first recommendation comes out of analysis of the small-scale food processor case studies and the CWK case study. While it specifically applies to CWK, it is relevant for other small-scale food processors. Recommendations 2 and 3 also apply to CWK, but address a larger group of stakeholders (i.e. institutions funders, and supply chain players such as farmers, aggregators, and distributors) in the small-scale food processing for farm to institution world. These recommendations come out of the analysis theme that there is the need for more diverse cross-sector partnerships to share information and aggregate their power to shift the supply chain and move toward the development of a regional food system. Recommendation 4 also addresses a larger group of stakeholders, and suggests how the conversation around farm to institution could be reframed.

Due to the limitations of this research, the last two recommendations center around further research into various aspects of small-scale food processing in farm to institution. Areas for further exploration include the effect of target local procurement laws, small-scale food processing's impact on the local economy, and further research into similar food processing ventures to CommonWealth Kitchen to gather and share lessons learned.

Recommendation 1: CommonWealth Kitchen should develop a strategic plan for their farm to institution food processing program

As CWK's small-scale food processing program is only a few years old, I suggest that they re-examine their goals of this program and go through a strategic planning and development process. Processing in farm to institution is resource intensive, and before moving forward it would be important to understand what their intended trajectory of the program is. It is also important for CWK to understand how this new program fits in with their other goal of supporting and growing member businesses. At the moment the two programs are operating in parallel, without intentional overlap between the two.

While CWK is currently concerned with breaking even with their small-scale processing program and acquiring new institutional contracts, it is important that they take a step back and understand the intent and trajectory of this program. To do this I suggest they examine each aspect of their small-scale processing program (farmer value-added, co-pack and farm to institution processing), and quantify the value and opportunities within each one. As can be seen in the case of other small-scale food processors (Chapter 5), taking on too much can be

detrimental to the program as a whole, so CWK must decide on which aspects to focus on and bolster, and which ones to cut back on and potentially eliminate all together.

Case studies of other small-scale food processors, as well as the case study of CWK (Chapters 5 and 6), also exemplified that the two biggest challenges are addressing buyer habits and finding ways to scale up. Some strategies to address these challenges were to explore ways to add physical storage and processing space, establish forward contracts with farmers and buyer commitments from institutions, take opportunities to educate and inform institutional customers, and provide technical assistance for institutional kitchen crews. I recommend that CWK focus on these challenges and look for intentional ways to address these challenges while moving forward with this program.

While this recommendation specifically speaks to CWK, strategic planning and development is something that other small-scale food processors within the farm to institution movement would benefit from.

Recommendation 2: There should be further exploration and expansion of existing cross-sector partnerships

It was apparent from the interviews that there is the need for more cross-sector partnerships that would work on the challenges within farm to institution. Therefore, it is recommended that those who are currently convening cross-sector partnerships such as Health Care Without Harm, Farm to Institution New England, and the Real Food Challenge take a critical look at the work they are doing and the stakeholders they have involved. It seems common for researchers,

academics, and nonprofits working on these issues to be in the room, but it is necessary to include those that are actually working along the supply chain such as farmers, food-processors, aggregators, and distributors are there as well.

In addition to taking a critical look at the work they are doing, it is recommended that cross-sector groups, or organizations that work with various stakeholders in this industry share information about the work they are doing and take home lessons learned from other cross-sector partnerships doing similar work.

Recommendation 3: An existing organization in the farm to institution field should develop a cross-sector pilot program focused on buyer commitments from institutions

Based on the need for diverse cross-sector partnerships in the farm to institution field and the challenge of obtaining buyer commitments, I recommend that a cross-sector pilot program focused on buyer commitments from institutions be convened. This is a large undertaking for any organization to oversee, but it is recommended that an organization already working in this field that works with numerous farm to institution stakeholders be the organizer and leader of this program. Examples of regional organizations that are already leaders in this field and that work with various stakeholders are Farm to Institution New England and the Real Food Challenge. As previously mentioned in Chapter 4, both of these organizations already bring different stakeholders together through workshops, conferences, and other meetings.

In the case that Farm to Institution New England (FINE) would lead this pilot program, an initial kick-off meeting that would convene all of the pilot

participants could happen as a pre-conference session at their annual summit. This summit already brings together those working in farm to institution, such as K-12 schools, health care facilities, colleges and universities, and recently correctional facilities. Additionally, in the past, the summit has been co-sponsored by Health Care Without Harm and the Northeast Farm to School Network, organizations that are also doing work to create cross-sector partnerships. The past collaborations between these three organizations would be useful to help recruit participants for the pilot. At the summit, topics touch on a range of issues, but also have focused in on supply chain management. For these reasons, FINE's annual summit would be an appropriate place to kick-off this pilot, as well as an appropriate place to present lessons learned and experiences the following year. Additionally, as a program such as this would need funding Farm to Institution New England has experience working with, and connections to, large funders such as the USDA and the Henry P. Kendall Foundation.

Ideally, this cross sector pilot program would bring together various partners involved in food processing in farm to institution such as farmers, food processors, distributors, food service management companies, food procurement directors at institutions and funders. Those that agreed to be a part of this pilot program would acknowledge and commit to the shared goal of strengthening and obtaining buying commitments from institutions. In this pilot each stakeholder would have a role to help reach this goal, and would agree to participate in the pilot for a specified period of time with regular progress meetings, strategic

planning meetings, and a final debrief session. Each stakeholder would have the following roles:

- Farmers: agreeing to supply the produce through volume agreements or planting agreements.
- Food processors: agreeing to process a specific volume over the course of a specific timeline for participating institution(s).
- Distributors: as a stakeholder typically left out of these conversations, constructively offering feedback on the process and their role. For the pilot, agreeing to distribute to the institutions that they work with as they will know there is a consistent and specific volume.
- Institutional food service management companies and food procurement directors: The institution(s) that are participating in this pilot would commit to purchase a specific volume of food over a specific period of time from the local food processor(s) involved.
- Funders: Due to the challenges of funding small-scale food processing, participating funders would commit to contribute some funding to this pilot for its duration.

Recommendation 4: Stakeholders working on local food processing within the farm to institution field should reframe the farm to institution conversation to focus on the local and regional economic impacts of small-scale food processing.

It is recommended that those working within the farm to institution field reframe their conversations about farm to institution from food systems to one more focused on economic impacts. Research into the economic impacts that farm to institution has on the local economy has been done, and it has been well acknowledged that import substitution has a positive effect on the local and regional economy.

When discussing and promoting the work that they do, stakeholders in this field should promote the economic development contributions of their projects. These benefits can be made more visible by sharing studies of the regional economic impacts of farm to institution, including job creation, increased farmer

and local producer revenue, and money circulating back into the local economy. This shift in framing around the benefits of farm to institution, specifically with food-processing in farm to institution, could be used as a strategy to influence decision and policy makers to support this type of work.

Recommendation 5: Policy makers should further examine the effects and viability of target local procurement laws for private institutions

Although many of the interviewees of this thesis were skeptical about procurement policy's role in farm to institution, it is recommended that stakeholders in this field further examine the effects that target local procurement laws have on institution procurement. Target local procurement laws should be further explored, as the literature implies that they have an effect. Also, institutions have begun to implement their own voluntary procurement targets and mandates.

The literature implies that a target procurement law has a greater effect on the procurement of local goods than a preference law, as it is a mandate rather than just a suggestion. However, it was beyond the scope of this thesis to examine this claim. Research into this topic could focus on the extent of the purchasing market these laws apply to, the extent to which states with target laws have seen an increase in local procurement, the types of opposition to these laws, and the extent of alignment/misalignment between state and federal procurement laws. In addition further research into supplemental legislation such as tracking and enforcement of the laws could greatly assist the field.

Voluntary procurement targets and mandates are seen with the work that the Real Food Challenge and BAMCO are doing. Colleges and universities that have committed to the Real Food Challenge have pledged to increase local procurement by 20 to 40%, and BAMCO has a company-wide mandate to source 20% of their products locally. Due to these self-imposed procurement targets, it is suggested that research into whether policy around mandating increased local procurement for private institutions could be developed, especially for those institutions receiving various forms of state support.

Additionally, with the development and enhancement of local procurement laws, it is necessary that reporting and enforcement tools are enacted, such as annual reporting from institutions and penalties for institutions that do not comply.

Recommendation 6: Small-scale food processors should research similar food processing ventures and convene to share information and lessons learned.

While this thesis provided brief case studies of organizations doing similar work in small-scale food processing to CommonWealth Kitchen (CWK), it is recommended that a thorough survey of all small-scale processors and co-packers in the country is done. A more comprehensive list of organizations for further research is listed in Appendix C, and some of the organizations for further research include the Cleveland Culinary Launch and Kitchen and Baltimore Food Hub. While the work that CWK does is unique, there are many lessons that can be learned from organizations that are small-scale processors and co-packers whether they be profit or mission driven.

Initial research into other small-scale food processing centers show that there are similarities in challenges faced. Creating a space to share strategies to address these challenges could be beneficial to other small-scale food processors. Additionally, as was mentioned throughout multiple interviews, success stories and what is working for food processors and institutions should be shared with the greater farm to institution community. Sharing these successes could help increase support in the way of funding and partnerships for small-scale food processing ventures.

Chapter 9: Conclusion

The challenges and opportunities within the farm to institution movement are well known and documented, especially when it comes to the procurement of fresh local food by institutions. However, the role that small-scale food processing plays in the farm to institution movement is less explored. With the participation of several farm to institution experts, dining procurement officers, food management companies and food processors, this thesis examined small-scale food processing's role and contribution to farm to institution. This exploration was done through a literature review, interviews, the completion of three case studies of Northeast small-scale food processors, and an in-depth case study of the work CommonWealth Kitchen is doing with small-scale food processing for anchor institutions.

Through analysis of the existing literature on farm to institution and small-scale food processing, as well as the information gathered through interviews, this thesis found that while there are similar challenges with food processing in farm to institution as there are with procurement of fresh food, there are also unique challenges such as buyer habits, funding and scaling up. It also found that while local procurement laws and mandates have good intent, they are not strong enough yet to create major change within the farm to institution movement. One of the most significant findings was the need to reframe the conversation around farm to institution. As stated, the conversation around farm to institution has typically been framed around how to get local produce to institutional markets

and the benefits that farm to institution can have on the food system. However, it is necessary to shift this framing towards emphasizing the positive economic impact that small-scale food processing in farm to institution can have on the regional economy. By supporting small-scale food processing ventures, there is the potential to fill existing market gaps in farm to institution and move toward a regional supply chain.

Due to the potential that small-scale food processing has in the farm to institution movement (addressing market gaps, shifting markets to be more local, and strengthening regional food systems), recommendations were made for multiple stakeholders in the movement. Recommendations included strategy development for small-scale food processors, the development and support of cross-sector partnerships, the creation of a cross-sector partnership pilot program that focused on obtaining buying commitments from institutions, reframing the conversation around farm to institution to center around economic development, and additional research into various aspects of small-scale food processing in farm to institution.

Small-scale food processing's contribution to the farm to institution field, as well as the potential it has to transform regional economies, makes for an exciting topic. This topic involved multiple stakeholders over a range of industries, such as academics, policy makers, funders, researchers, and those directly involved in the food system such as farmers, processors, aggregators, and distributors. Thus, there are a lot of organizations that are working on these issues and finding solutions to challenges that arise. Moving forward, it is important for

these different groups to collaborate, discuss challenges, share strategic solutions to these challenges, and come together to form cross-sector partnerships that work to shift the market and transform regional food economies.

Appendices

Appendix A: Interview Subjects

Farm to Institution Experts

1. Simca Horwitz, Eastern Massachusetts Co-Director, Massachusetts Farm to School
2. Lucia Sayre, Western US Regional Director, Health Care Without Harm
3. Jennifer Obadia, Eastern US Regional Director, Healthy Food in Health Care Program, Health Care Without Harm
4. Bob Dandrew, Director, Local Economies Project
5. Sarah Brannen, Associate Director of Programs, The Hudson Valley Farm Hub
6. Megan Lehnerd, Newman's Own Foundation Doctoral Fellow, Friedman School of Nutrition Science and Policy

Small-Scale Food Processing Facilities

7. Joanna Benoit, Food Systems Program Manager, Western Massachusetts Food Processing Center
8. Sarah Waring, Executive Director, Vermont Food Venture Center
9. Jim Hyland, Founder and CEO, The Farm Bridge

CommonWealth Kitchen Staff

10. Jen Faigel, Executive Director and Co-Founder, CommonWealth Kitchen
11. Mia Cellucci, Strategic Partnerships and Marketing Manager, CommonWealth Kitchen
12. Adam Scipione, Commissary Program Manager, CommonWealth Kitchen

Self Op-Institutions/Food Service Management Companies

13. Crista Martin, Marketing Director for Strategic Initiatives and Communications, Harvard University Dining Services
14. Brittany Florio, Senior Sustainability Coordinator, UMass Auxiliary Enterprises
15. Elaine Smart, Regional Vice President, Bon Appétit Management Company

Appendix B: Interview Questions

For Academic Institutions

1. What is your name and job title?
2. How long have you been in this position?
3. What percentage of the budget is for food?
4. Are your dining services self-operational or do you contract out to a food management company?
5. Please explain how sourcing works.
    a. Do you have a say in what is sourced, or is this all the food management company?
    b. What is your influence over the food management company?
    c. Is locally produced and processed food offered through your food management company?
6. What is your definition of "local" and do you procure local produce and products?
    a. If yes, how long have you been procuring local produce and products?
    b. If yes, do you set procurement goals and/or targets for locally grown and produced food?
        i. If yes, what is the target? What are your goals?
        ii. In no, why not? Would you be open to setting a target or goal in the future?
    c. If yes, What is your biggest challenge when looking to procure locally grown and produced food?
    d. If yes, have you thought about solutions to these challenges? What would make local procurement easier?
    e. If yes, what percentage of your food is sourced locally?
7. Are you aware of Massachusetts Local Procurement law?
    a. If yes, do you try to abide by the suggestion of the law?
    b. If no, how would you feel if this was mandated?

For Small-Scale Food Processors

1. What is your name and job title?
2. How long have you been in this position?
3. What is your definition of "local?"
4. How long have you been involved with farm to institution?
5. How long have you been processing local food?
6. How long have you been providing local food to institutions? Are these institutions local?
7. What is the process of working with institutions looking to locally procure food?
8. Are you aware of Massachusetts Local Procurement law?
    a. If yes, what are your thoughts on this law?

    b. If no, how would you feel if this was mandated? Would this be beneficial to your operations?
9. What is your biggest challenge when forming partnerships with institutions looking to procure local food?
10. Have you thought about solutions to these challenges? What would make local procurement easier?

Appendix C: Small-Scale Food Processors and Co-Packers for Further Research

Maryland

Baltimore Food Hub, Kitchen Incubator and Small-Scale Processing Facility, Baltimore, MD

New Hampshire

Genuine Local, Kitchen Incubator and Small-Scale Processing Facility, Meredith, NH

New Jersey

Organic Food Incubator, Co-Packer, Bloomfield, NJ

Ohio

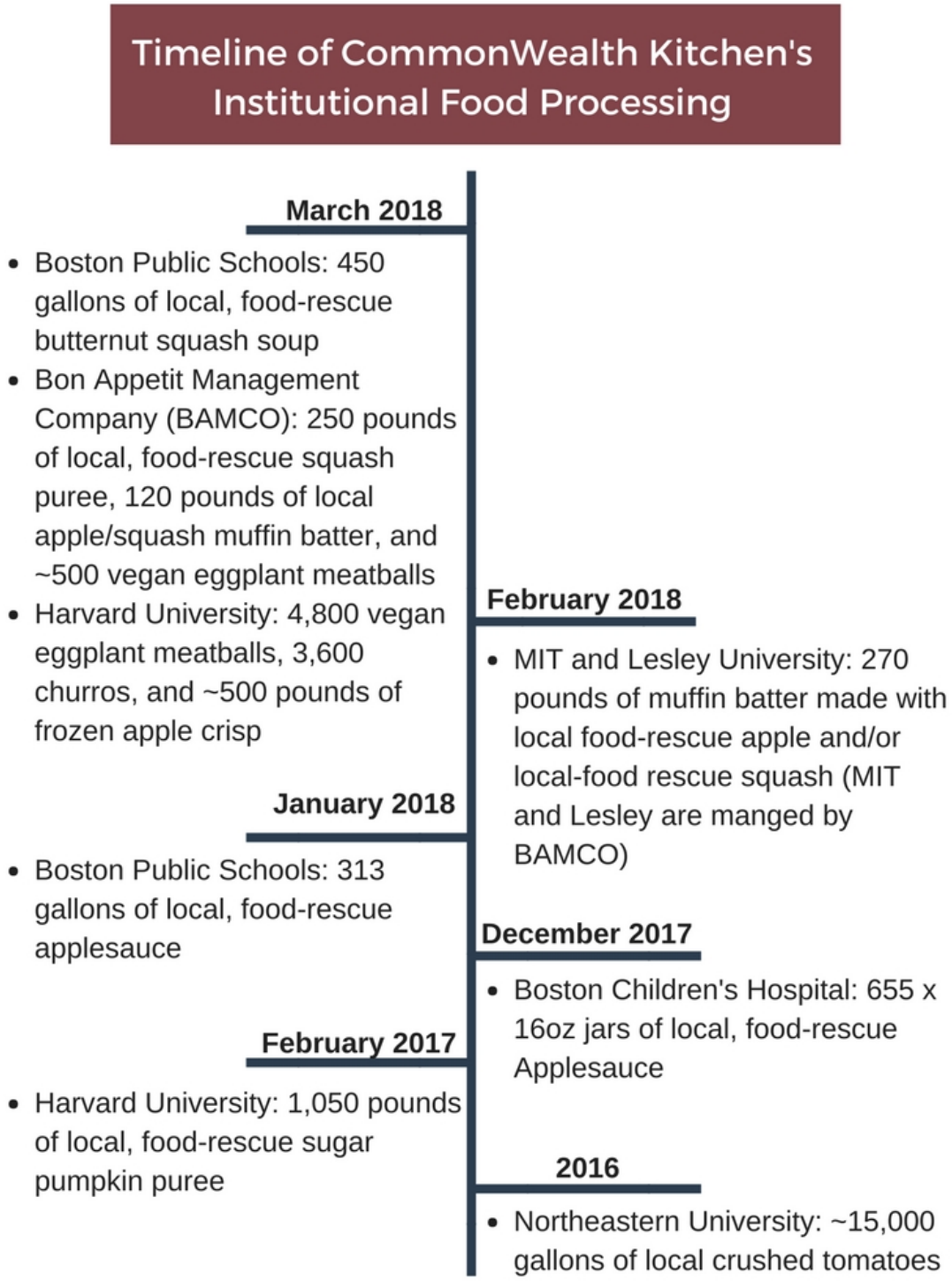
Cleveland Culinary Launch and Kitchen, Co-Packer, Cleveland, OH

Agricultural Incubator Foundation, Small-Scale Processing Facility, Bowling Green, OH

Vermont

Mad River Food Hub, Small-Scale Processing Facility and Distributor, Waitsfield, VT

Appendix D: Timeline of CommonWealth Kitchen's Institutional Food Processing



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