

The Challenges and Opportunities to Increase Institutional Sustainable Food Purchasing

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May 7, 2018

Table of Contents

- I. INTRODUCTION2
- II. LITERATURE REVIEW3
- III. METHODOLOGY.....5
- IV. THE US FOOD SYSTEM LANDSCAPE.....6
 - A. THE MOVE TOWARDS LOCAL AND REGIONALLY SOURCED FOOD.....8
 - B. AGRICULTURE OF THE MIDDLE: BARRIERS8
 - C. INSTITUTIONAL BUYING PRACTICES AROUND SUSTAINABILITY.....9
 - 1. 2016-2020 UVA Sustainability Plan10
 - 2. AASHE STARS.....11
- V. THE OPPORTUNITY11
 - 1. The production gap12
 - 2. The price gap.....13
- VI. THE COMMUNITY CANNERY15
 - A. BACKGROUND.....15
 - B. MODERN DAY15
 - C. CASE STUDY AND INTERVIEW17
 - 1. Cannery SWOT Analysis20
- VII. A LOCALIZED SUPPLY-CHAIN20
 - A. THE ROLE OF INSTITUTIONS IN LOCAL FOOD22
- VIII. CONCLUSION24
- IX. APPENDICES26
 - A. CURRENT PROJECTS AT UVA26
 - B. VA FOOD ORGANIZATIONS26
 - C. VA CANNERIES27
 - D. STAKEHOLDER MAP27

I. INTRODUCTION

Our modern-day food system is highly industrialized and efficient. While in the past this was desirable to feed a growing population, its consequences are quickly outweighing the benefits. There is a current movement towards local food sourcing by K-12 and university dining halls around the United States. Industrial food buyers such as dining halls or hospitals often say they would like to source local products, but the system currently is not designed to support local purchasing. The infrastructure around food caters to large-scale producers, not necessarily local producers using good practices. In order to make local purchasing possible several key stakeholders are needed such as food hubs, local distributors and value-added facilities. An additional challenge for meeting student demands for locally produced food is that the growing season does not align with most schools' academic calendars. The height of the growing season is during the summer when students are not around. Given this misalignment of supply and demand there is an opportunity to fill the gap in the supply chain with a value-added facility.

Prior to the mass industrialization of food many communities had local canneries where food could be canned and preserved at its peak. The canneries allowed those communities to save the bounties of the growing season to be used later on in the winter. In the modern age most of these local canneries have disappeared, but there recently has been a re-engagement with the concept. This paper will analyze the current opportunities and barriers for institutions to purchase locally and the potential for key infrastructural changes, with a focus on adding a local cannery, to improve local food ecosystems. The paper seeks to determine whether investing in a Charlottesville cannery would positively impact the UVA local food ecosystem through allowing our dining hall to source locally, provide additional jobs in the community, decrease food waste and increase potential income for local farmers.

Leading up to this project I have completed several research projects relating to the needed infrastructure to support local food systems. I have worked with the Local Food Hub in Charlottesville, which could potentially be a key player in helping to distribute products from the cannery. During my time with the food hub I also built relationships with and interviewed farmers in the community. I received feedback that a processing facility for value-added products is something that is much needed in our community in the eyes of farmers. I also have attended both a conference on local food and a symposium on food supply chains where the idea of the need for a cannery or a way to divert produce from the summer to the fall and winter arose numerous times. I also am a member of the Sustainable Food Strategy Task Force at UVA that creates action plans to accomplish goals around sustainable food at the university. I have a connection with UVA dining as well and the Aramark Sustainability Coordinator whom I believe would also be supportive and key partners on this project.

Overall, while this is a return to something from an earlier time, it also is a novel concept. Investing in local canneries has potential for huge implications for UVA and other universities if proven to be a viable way to strengthen the power of dining halls to purchase locally as well as provide economic, environmental and social impacts for communities nationwide.

This research incorporates a variety of resources including journals, primary sources (existing canneries), interviews with farmers and other key stakeholders as well as data sources from the USDA and Economic Research Service (ERS). Given that community canneries have become somewhat obsolete there currently is a lack of recent research on the concept. There are a few significant studies on the risks and benefits of value-added processing as well as the farmer perception of this model. The nature of this project and the complexity of the food system required that I assemble research from multiple facets, not only those specific to canneries. Given the entrepreneurial nature of the idea it was challenging to truly determine the likelihood of success of the model.

II. LITERATURE REVIEW

As a result of the increasing pressures to build infrastructure to support the growing and selling of local foods there has been a significant amount of research regarding how to best implement change in the food system. A key player that is identified is the Cooperative Extension educators because of their “historically deep, embedded relationships that bring human, technical, informational, relational, social, and financial resources to local communities”.¹ In contrast to the traditional role of the government in supporting and regulating our food supply and agriculture, local food systems rely upon these local stakeholders such as Community Extension Educators and institutional buyers. A key example in the literature is the Farm to School movement and how it has connected local communities with local farmers in an effort to increase local purchasing power by schools and institutions.² While Farm to School has had relative success, in order to truly transform the food system more recent research points to moving to a new market model including the “non-market trade of food, collective community production, and food sovereignty”.³ This model focuses on communities coming together to collectively produce products and have food independence through growing food for their own communities. In addition to the Community Extension Educators another interesting idea is the idea of “institutional entrepreneurship”, which “refers to the activities of social actors who leverage resources to create new institutions or transform existing

¹ Jill K. Clark, et al., "Cooperative extension and food system change: goals, strategies and resources." *Agriculture and Human Values* 34, no. 2 (2017): 304.

² *Ibid.*

³ *Ibid.*

ones”.⁴ These entrepreneurs must “address multiple interconnected elements, filling in gaps in processing and distribution, encouraging shopping and eating patterns to match local seasonality, and extending off-season production”.⁵ There is currently a gap in the research on the viability of community canneries specifically, but there is recent research on the impact of “value-added” products, which can “increase food variety, as well as food availability, particularly when fruit, vegetables and other food leftovers that otherwise would be discarded are further processed into conserves, pickles, sauces and many other varieties of food products”.⁶ The *British Food Journal* examined a case of Alabama growers and the farmer viewpoint of taking part in value-added production. The case exposed the key barriers such as a lack of physical facilities to process foods⁷ but did not explore the buyer side of the equation. In addition to this study there have been others to determine the ability of value-added processing to increase farmer incomes such as Jennifer Lewis’s thesis on “How farmers in West Virginia are using value-added processing to increase annual income.” The majority of the research around value-added products focuses on the potential benefit to farmers. There is a lack of research around the specific viability of using cooperative processing facilities to support university purchasing of local products. There is research examining the decision-making processes of institutional buyers around local food purchasing and the divergent decision-making processes of consumers versus suppliers such as the study entitled, “Institutional sustainable purchasing priorities: Stakeholder perceptions vs environmental reality” by Madeleine Pullman. In general, there is a significant body of research around institutional buying practices and supply chain, but the concept of sustainability being an important factor is new given the recent rise in consumer and student demands for local produce.

In order to carry out this research I used the current literature around food supply chains, value-added production and institutional buyers to assess the potential impact of a cannery in Charlottesville on UVA dining. The methodology used in many of these reports consisted of farmer interviews and surveys as well as research on the efficiencies and inefficiencies of the food system today. I examined the institutional purchasing process in order to determine the barriers to buying local and determine whether the benefits of a cannery would align with the needs of institutional buyers as well as to interview key stakeholders at UVA dining.

⁴ Rebecca Dunning, et al. "Educator and institutional entrepreneur: Cooperative Extension and the building of localized food systems." *Journal of Agriculture, Food Systems, and Community*. 104.

⁵ *Ibid*, 100.

⁶ Duarte Alonso Abel. 2011. Farmers' involvement in value-added produce: The case of Alabama growers. *British Food Journal* 113, (2): 190

⁷ *Ibid*, 200.

III. METHODOLOGY

This report is primarily qualitative, but also includes quantitative support. My main objective was to determine the impact that a local cannery could have on UVA dining's ability to purchase more locally sourced products. This evaluative report seeks to determine the impact of a real-world solution and offers considerations regarding its implementation. In order to complete the analysis, I utilized three primary sources of information. First, I used knowledge I have gained from my own experience working with UVA dining as well as on other local, food-based initiatives. I have worked directly with farmers, distributors and buyers in the space and used this knowledge as a starting point for my research. Building upon my own knowledge I used interviews I conducted with farmers and completed additional interviews with a successful cannery in our region. Lastly, I interpreted the literature in the field relating to building local food systems, value-added facilities and higher institution purchasing decisions. The major challenge in conducting this research was the lack of existing examples of a cannery supplying a university.

My background

As stated in the introduction to this report I have developed relationships with several of the key stakeholders around food supply chain decisions in the Charlottesville community. Given these relationships and exposure to the challenges at hand I have built a solid foundation from which to build my research. While my first-hand experience with this issue will help to provide key context for the subject of my research, it also required an awareness of bias towards the proposed solution. In order to avoid this implicit bias, I have consulted peers as well as advisors throughout the development of this research in an effort to objectify this report.

Interviews

A key part of the research process that led to choosing this topic was interviews. Last summer I interviewed farmers in the Charlottesville area who are suppliers for the Local Food Hub, a distribution hub in Charlottesville. In addition to interviewing farmers I spoke with Samantha Jameson, Sustainability Coordinator at UVA Dining and staff members at the Local Food Hub. Finally, I spoke with students about their perspective on the concept. These interviews provided my research a broad range of viewpoints from the various stakeholders involved in the local food system and specifically the UVA food system. These interviews came from people who are directly affected by the local food supply chain and gave an inside look into some of the opinions that are important to consider when completing this type of research.

Several of the key stakeholders when interviewed were in support of the idea and thought it would be a great solution to the problems mentioned in this report, but these observations were often not grounded in solid evidence. Using interviews provided insight into what some of the key stakeholders may believe about the potential impact of a cannery but can also skew the perception of its plausibility as well as ignore downsides and major barriers such as costs.

Literature Analysis

The paper “Saving food: Food preservation as an alternative food activism” notes that “very little has been written about food preservation in the social sciences. We struggled to find sources that were evaluative instead of instructive”.⁸ This research takes the evaluative approach and ultimately provides an evaluation of a solution to a modern-day problem. The lack of literature focused on implementation of a cannery in relation to a university system proved to be a challenge. In order to construct the evaluation of a community cannery I used reports and papers detailing decision factors related to sustainable purchasing to capture the buyer perspective, studies related to the impact on farmers and their perspective to capture the grower perspective, and research on the food system at large to capture the community and nationwide impact of investing in value-added facilities.

Case studies

The last component of this research was the use of case studies to provide a quantitative approach to evaluating the viability of a community cannery. The 2002 report, “To Can or Not to Can? Feasibility Study for a Cannery in Scott County” provided a foundation from which to assess a cannery in Charlottesville. Like most studies around this topic it was not designed with an institutional buyer in mind and was not fully encompassing in its scope. Other reports such as “The feasibility of implementing a farm-to-college program at the University of Cincinnati” also did not directly speak to a community cannery supplying a university, but still provided valuable insight into the institutional supply chain.

IV. THE US FOOD SYSTEM LANDSCAPE

“Decisions about who produces our food, what food is produced, how it is produced, and who gets to eat that food have been steadily moving from the more public realm of households and governments to the more private realm of corporation boardrooms.”

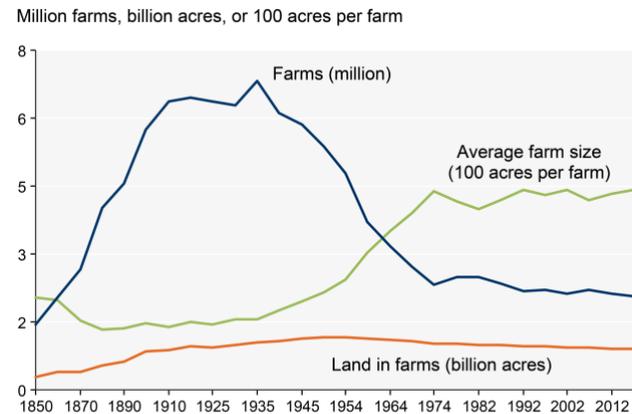
-Mary Hendrickson and Harvey S. James Jr.

⁸ Melissa A. Click, and Ronit Ridberg. "Saving food: Food preservation as alternative food activism." *Environmental Communication* 4, no. 3 (2010): 3.

In 2015 the Economic Research Service (ERS) reported that US agriculture, food and related industries were valued at \$992 billion or over 5% of US GDP. The report also cited that America's farms made up 1% or \$136.7 billion of the \$992 billion. The agriculture industry provides 11% of US employment and is the recipient of over 12% of American household expenditures.⁹ Given these large sums it appears that the industry is doing well. What is missing from the picture is where these dollars are going and the political, economic, environmental and social factors tied up in the food system.

Since 1935 the number of farms in the US has greatly declined from around seven million to slightly over two million.¹⁰ Accompanying this decline has been an increase in the average farm size. This inverse correlation of decreasing farms and increasing farm sizes points to the industrialization of the food system. Bigger farms producing more food is the new norm that has replaced small, local farmers growing products for their communities.

Farms, land in farms, and average acres per farm, 1850-2016



Source: USDA, Economic Research service using data from USDA, National Agricultural Statistics Service, Censuses of Agriculture (through 2012) and *Farms and Land in Farms: 2016 Summary*.

Due to this decrease in small scale farms the power of these growers has also declined. With increasing food safety requirements by the FDA such as the Food Safety Modernization Act (FSMA) and Good Agricultural Practices (GAP) required by many corporations these growers often have difficulties meeting these new standards and reaching wholesale markets. Additionally, with the rise of genetically-modified organisms and usage of fertilizers and pesticides the integrity of US food has become a topic of concern. In response to these concerns numerous farm to table movements have arisen. Many consumers are seeking to reconnect with their food and eat more simply. Food activist and author Michael Pollan spoke to this sentiment in his book, "Food Rules" in saying, "Don't eat anything your great-grandmother wouldn't recognize as food." The following section addresses how consumers are finding these unadulterated foods amongst the industrial food supply.

⁹ "Ag and Food Sectors and the Economy," USDA ERS - Ag and Food Sectors and the Economy, , accessed March 31, 2018, <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy/>.

¹⁰ Ibid.

A. The move towards local and regionally sourced food

Many of today's consumers are demanding to know where their food comes from and how it is produced. They want to know their farmers and the food they are eating. The effect of these demands has been a rise in farmers markets and Community-Supported Agriculture (CSA) programs in many communities throughout the United States. According to the *National Journal* the number of farmers markets doubled between 2008-2013 from 4,685 to 8,144 markets. The journal also points out that in 1994 there were less than 2,000 farmers markets in the nation.¹¹ This trend has only increased with the addition of the farm to school movement and farmers markets on university campuses. CSA programs are another growing trend. These programs allow community members to purchase "shares" of a farm in exchange for fresh produce on a weekly basis during the growing season. The CSA program allows consumers to take an active role in picking their farmer as well as supporting that farmer in growing their food.

While these avenues for purchasing local have made locally sourced food more accessible there are still infrastructural challenges for small farmers in getting their product from farm to market. Consumers are learning more about the industrial food system and are seeking better alternatives, but the system wide change needed to make this happen is the challenge those interested in sustainable agriculture must attempt to solve today.

B. Agriculture of the Middle: Barriers

Under USDA terminology sales via farmers markets or CSA shares are considered "Direct Sales to Consumers" or DTC. A 2012 Census of Agriculture Report found that only 6.9% of the nation's 2.1 million farms used DTC and the sales from these farms only comprised 0.3% of the total from agricultural sales. These farms are often small and have small sales comparatively to larger farmers.¹² A project funded by the USDA has set out a research agenda regarding what has been deemed "Agriculture of the Middle". This group of university professors and USDA staff has published several reports as well as case studies on the issue. The group defines Agriculture of the Middle (AOTM) as "a spectrum of farms and ranches that are declining because they are too small to be served well by commodity markets and too large or otherwise unsuited to be served well by direct markets. Most AOTM farms are characterized by

¹¹ Brian Resnick and Marina Koren, "The Number of U.S. Farmers Markets Has Nearly Doubled in the Last Five Years," *National Journal*, accessed March 31, 2018, <https://www.nationaljournal.com/s/58537/number-u-s-farmers-markets-has-nearly-doubled-last-five-years>.

¹² USDA. 2012 Census of Agriculture Highlights.

their types of production and crops, their business organization, their geographic location, their access to markets, and the production and marketing strategies they adopt to remain viable.” The goal of The Agriculture of the Middle initiative is to “renew small and mid-sized farming and ranching through innovative market relationships”.¹³ One publication entitled “Values-based supply chains: An introduction to nine case studies” introduces an important study the group conducted of nine small to mid-size farm operations and the role of diversifying their value chain to address some of the barriers these size farms face.¹⁴ Consumers who are accessing local produce are often obtaining it from these small and mid-size farms, but without the proper infrastructure to scale up as well as get more dollars back to the farmer there are serious questions around the ability of the local movement to sustain itself in the long term.

C. Institutional buying practices around sustainability

Every year food service companies purchase millions of dollars of food for their clients. In the case of the University of Virginia Aramark is the food service company for the roughly 20,000 students the university serves. Institutions have substantial purchasing power when it comes to food, which also implies they have the power to make systemic shifts in the food supply chain. For the purposes of this report the focus is on universities, but similar principles can be applied for hospital systems, sporting arenas, and other large foodservice clients. Given that consumers are looking for local, so are students when shopping for universities. Ranking sites such as Niche rank colleges by various factors such as academics, faculty, and most relevant, food. More and more students are seeking healthy options as well as local. In order to support universities in meeting these demands guides have been developed such as “A Guide to Developing a Sustainable Food Purchasing Policy” created by the Association for the Advancement of Sustainability in Higher Education (AASHE). This guide is intended to help sustainability advocates at universities around the country to encourage more sustainable purchasing at their locations as well as demonstrate to management and corporate the benefits of supporting local farmers.

Direct Agriculture Sales to Consumers, by Per Farm Sales, 2012
(number of farms and \$ millions)

Per Farm Sales	Farms		Sales	
	No.	%	\$ millions	%
\$1-\$499	37,398	26	7.8	1
\$500-\$999	20,170	14	13.7	1
\$1,000-\$4,999	52,750	36	121.8	9
\$5,000-\$9,999	14,452	10	97.3	7
\$10,000-\$24,999	11,045	8	164.8	13
\$25,000-\$49,999	4,244	3	143.7	11
\$50,000 or more	4,471	3	760.8	58
Total	144,530	100	1,309.8	100

*Note: Excludes craft items and processed products such as jellies, sausages, hams, cider, and wine.
Source: USDA NASS, 2012 Census of Agriculture.*

¹³ "Agriculture of the Middle." Agriculture of the Middle. <http://agofthemiddle.org/>.

¹⁴ Larry Lev and G.W. Stevenson "Values-based food supply chains: An introduction to nine case studies." *Center for Integrated Agricultural Systems, University of Wisconsin-Madison*

A report in the *International Journal of Operations & Production Management* outlines the typical priorities of institutional buyers when making food purchases. The authors of the report interviewed food purchasers and found that the majority focus on cost first and typically begin to focus more on local when pushed to do so by their consumers. Even if the consumers desire local the price point remains a main consideration. The main themes from the research were “focus, stakeholder pressure, supply chain structure, measurable outcomes, and highest volume food products”. The report points out the divergent nature of these themes and how cost still prevails over all other considerations even if purchasing locally means less food waste or lower transportation costs.¹⁵

To improve sustainable purchasing practices the University of Virginia has integrated sustainable dining criteria into its 2016-2020 Sustainability Plan. In addition to this plan the university has an organization called the Sustainable Food Strategy Task Force. This task force has created an action plan to propel sustainable food initiatives at the university and holds monthly meetings that engage various stakeholders at the university around these issues as well as events in the community. Lastly the university is using AASHE STARS criteria to measure sustainability at the university in comparison to other universities around the country.

1. 2016-2020 UVA Sustainability Plan¹⁶

The UVA 2016-2020 Sustainability Plan was built upon the three pillars of Engage, Steward and Discover and sets deadlines and metrics for action items to improve sustainability at the university. Below are the key components of improving food sustainability at UVA taken from the sustainability plan.

- Annually increase the percentage of sustainable food and beverages available on grounds
- Reduce food waste and single-use food serving items sent to landfill by 2030, in alignment with the overall UVA waste goals
- Reduce the energy and water impact of dining operations
- Increase student, staff, and faculty awareness of sustainable food systems and seek to translate this heightened awareness into informed choices
- Collaborate within UVA and with the region, bringing together faculty, staff, students and dining operations to advance sustainable food systems in the broader community

¹⁵ Madeleine Pullman and Robin Wikoff. 2017. Institutional sustainable purchasing priorities. *International Journal of Operations & Production Management* 37, (2): 162-181.

¹⁶ *University of Virginia Sustainability Plan 2016-2020*. UVA Committee on Sustainability. Accessed February 15, 2018. [https://sustainability.virginia.edu/docs/UVA Sustainability Plan.pdf](https://sustainability.virginia.edu/docs/UVA_Sustainability_Plan.pdf).

2. AASHE STARS

In order to hold the university accountable to improving sustainability it has decided to use a reporting tool developed by The Association for the Advancement of Sustainability in Higher Education (AASHE). “The Sustainability Tracking, Assessment & Rating System™ (STARS) is a transparent, self-reporting framework for colleges and universities to measure their sustainability performance”.¹⁷ This tool covers all areas related to sustainability including food. The food section of AASHE focuses heavily on purchasing practices. In order to earn points under STARS universities must report the percentage of third-party verified purchasing (USDA organic, Human Certified, etc.) as well as Local & Community Based purchases. The Local & Community Based focus on producers within 250 (produce) or 500 (meat) miles that earn under a certain threshold of income and use best practices. This metric has become an important driver towards institutions purchasing from smaller, local growers in their community. In the case of UVA, the university works with a local food aggregator and distributor called the Local Food Hub (Charlottesville, VA) to gain access to local foods from small growers. The Local Food Hub (LFH) works with small farmers and purchases their product to then be stored at the LFH warehouse and then sold and distributed to restaurants and larger institutions such as UVA. The university currently holds the second highest recognition of gold and has reached 8% sustainable purchases of total spend.

V. THE OPPORTUNITY

According to the USDA the foodservice industry supplied around \$1.46 trillion dollars’ worth of food in 2014.¹⁸ The industry has tremendous spending power and a growing influence over the food supply chain. Given its level of influence the foodservice industry has the opportunity to engage in more local food purchasing to address several of the issues outlined in this paper. A Report to Congress by the USDA in 2015 on trends in US local and Regional Food Systems found that of the 7.8% of US farms marketing locally 70% only use direct to consumer (DTC) marketing channels.¹⁹ The report measured an increase of 5.5% in farms with DTC sales, but saw no change in the value of DTC sales. This could be attributed to growth in selling through non-direct channels such as institutions, but the census did not measure this data. If indeed small farmers are looking to increase sales to institutions in addition to DTC sales this creates an opportunity for institutions to not only satisfy increasing consumer demands for local, but to also increase earnings for local farmers who want to produce for those consumers.

¹⁷ "AASHE STARS." AASHE-STARS. Accessed March 31, 2018. <https://stars.aashe.org/>.

¹⁸ "Market Segments." USDA ERS - Market Segments. Accessed March 31, 2018. <https://www.ers.usda.gov/topics/food-markets-prices/food-service-industry/market-segments/>.

¹⁹ USDA, ERS, *Trends in U.S. Local and Regional Food Systems: A Report to Congress*, by Sarah A. Low, et al.

1. The production gap

On December 8, 2017 a group of students, faculty, and foodservice professionals gathered at the Virginia Higher Education Sustainable Food Supply Chain Symposium. This symposium was held to discuss and brainstorm how to move sustainability initiatives forward at the six Virginian universities that form the 6-VA group including James Madison University, George Mason University, University of Virginia, Virginia Commonwealth University, Old Dominion University and Virginia Tech. The symposium first covered AASHE STARS and was followed by break- out sessions to brainstorm projects that the six universities could collaborate upon and use to advance sustainable food purchasing. These sessions resulted in five main focus areas as follows: market research, focus on ingredients, student engagement, shared infrastructure, and labeling and marketing. Each area had its own action steps as well as “propose champions” to move it forward. Within the shared infrastructure focus was the idea of

	VIRGINIA FRUIT AND VEGETABLE AVAILABILITY CALENDAR <small>www.virginiagrown.com</small>											
	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
APPLES												
ASIAN PEARS												
ASPARAGUS												
BEETS												
BLACKBERRIES												
BLUEBERRIES												
BROCCOLI												
CABBAGE												
CANTALOUPE												
CUCUMBERS												
EGGPLANT												
GRAPES												
GREEN BEANS												
GREENS/SPINACH												
HERBS												
NECTARINES												
ONIONS												
PEACHES												
PEPPERS												
POTATOES												
PUMPKINS												
RASPBERRIES												
SQUASH												
STRAWBERRIES												
SWEET CORN												
SWEET POTATOES												
TOMATOES												
WATERMELONS												

Virginia Department of Agriculture and Consumer Services

creating a network of shared infrastructure among the six universities to streamline the food supply chain and increase local purchasing. One element of this infrastructure was the idea of a cannery.²⁰

The typical university operation schedule roughly runs from August to May. This is when dining operations are servicing thousands of students across the various dining locations and are purchasing the maximum number of products. The average production season for Virginian farmers runs from May to October with peak production during the summer months as shown in the Virginia Fruit and Vegetable Availability Calendar.²¹ January through April the majority of produce is not able to be grown

in Virginia. This poses a challenge for universities with goals of purchasing local products due to the nature of the university operation schedule. If local products were to be canned or flash-frozen for use at a

²⁰ Kara Krantz.. *Virginia Higher Education Sustainable Food Supply Chain Symposium Report*. University of Virginia. Institute for Environmental Negotiation.

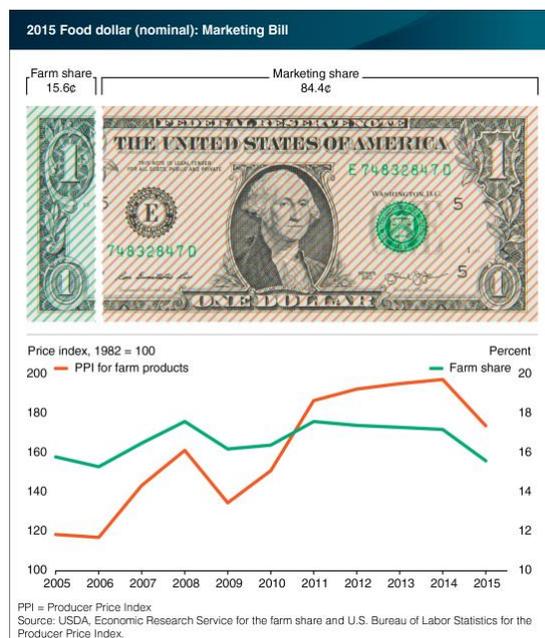
²¹ VDACS. "VDACS." Accessed March 31, 2018. <http://www.vdacs.virginia.gov/>

later date this could be a way for universities to still supply local produce during the off months of production. While this idea seemed promising the issues of price point and volume ultimately make it a less viable option. Given the lack of plausibility of a cannery there is still an opportunity to discover opportunities to close this production gap and link locally grown produce with student dining during the winter months.

2. The price gap

The second opportunity for institutions is to support the development of local food infrastructure through purchasing from food hubs. The average farmer in 2015 only received 15.6 cents of every dollar spent on food produced.²² The food supply chain adds value at every step. Beginning with farmers as the food producers the food then must be stored, distributed, and sold. These steps add lots of intermediaries who capture a portion of the value of the food. Small farmers also have challenges accessing channels beyond DTC because of strict food safety requirements such as Good Agricultural Practices (GAP) and the Food and Safety Modernization Act (FSMA). Food Hubs help small farmers reach larger markets. The Local Food Hub in Charlottesville works with small growers to purchase their products at a higher than market average. The food hub then sells the products to restaurants and institutions such as UVA who value locally-sourced products. The food hub stores, distributes and sells products for the farmers while allowing them to keep a larger portion of the food dollar. In general, it is challenging for large institutions such as UVA to work with these small growers because the food service company has preferred vendors that are able to provide large volumes just in time. Putting pressure on universities to source locally and broker deals with local food hubs and other smaller vendors is another opportunity along the supply chain to increase value for farmers and for consumers desiring local products.

Farmers also are able to increase value through processing their products or selling “value-added” products. Examples of value-added products include jams, jerky and salsas. Other benefits of value-added products are that they extend food availability into off seasons and give consumers more variety.²³ An



²² USDA ERS - Chart Detail. "Decline in Farm Share of U.S. Food Dollar Mirrors Drop in Farm Commodity Prices". March 2017. <https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=82936>.

²³ A.D. Alonso. 2011. Farmer's involvement in value-added produce: the case of Alabama growers. *British Food Journal* 113 (2):187-204.

article in *Successful Farming* titled, “Farmers must get in position for gaining value from value-added” asserts “It’s not that farmers are in the wrong business... The problem is that they’re positioned at the wrong end of the business, and not where the money is made in processing and packaging name-brand products”.²⁴ The 15 cents on the dollar that farmers currently earn has the potential to expand as they capture more value from processing their own products and having a larger piece of the food supply chain. “ ‘Values-based food supply chains’ are one option that has emerged to create more viable marketing channels for small and midscale producers... efforts around the country to rebuild regionally organized food production and distribution systems to meet growing consumer and institutional demands for... locally produced foods”.²⁵ As of 2012 the USDA Agricultural Census reported 94,799 farms producing or selling value-added products, or 4.5% of all US farms.²⁶ In an interview with the famous theatrical farmer Joel Salatin, owner of Polyface Farms in Swoope, VA, he stated that he had high hopes in the past that the local Charlottesville food hub, the Local Food Hub, would have entered the value-added space and built a facility. He sees it as a way to help farmers with marketing their product and to cater to the modern consumer that desires convenience. Another farmer interviewed was Lee O’Neil from Radical Roots farm in Keezletown, VA. She already works with a facility in West Virginia to process her tomatoes into salsa but wishes that there was a facility closer here in Virginia. A master’s thesis by a student at West Virginia University in 2002 researched how farmers in WV used value-added processing to increase annual income. The report focused on the potential for community processing facilities to keep money local to decrease the likelihood of it not making its way back to those who produced the products. The study found that farmers in the area studied still lack knowledge on value-added processing and its potential but would be interested in learning more.²⁷ Another study of Alabama growers revealed that of the participating farmers only 33.3% were “currently maximizing their produce left-overs, or unsellable produce by developing and marketing value-added products such as jellies, jams, and ice-creams. Almost one fourth of farmers would consider developing value-added products”.²⁸ Given the lack of farmers engaged in value-added processing there is an opportunity to close the price gap and give farmers more ownership over the supply chain. The challenges however are the lack of commercial kitchens and facilities to complete this processing in local communities.²⁹

²⁴ Cheryl Tevis. 2001. Farmers must get in position for gaining value from value-added. *Successful Farming* 99, (3) (Mid): 9.

²⁵ Robert P King, et al. "Using values-based food supply chain case studies in university classes." (2013).

²⁶ USDA. 2012 Census of Agriculture Highlights.

²⁷ Jennifer L. Lewis. "How farmers in West Virginia are using value-added processing to increase annual income." *Unpublished Master's thesis, West Virginia University, Morgantown, WV* (2002).

²⁸ Duarte Alonso Abel. 2011. Farmers' involvement in value-added produce: The case of Alabama growers. *British Food Journal* 113, (2): 190.

²⁹ *Ibid.*

VI. THE COMMUNITY CANNERY

“The urgent need of conserving every ounce of food produced this year makes the matter of preservation in the home of special importance. By the canning or drying of fruits, and green vegetables and the proper storing of winter vegetables the waste common in ordinary years can be reduced to almost nothing. The reason for having a supply of fruits and vegetables the year round, is not merely that they give variety to the diet. Besides the food value of the starch and sugar which they contain their mineral matter and fibrous material give them an important health value. In families where the diet is poor in vegetables and fruits, or where these are abundant for only three or four months of the year, recourse to medicinal help is more frequent.”

-Ontario Department of Agriculture, July 1917

A. Background

An article in the *Yearbook of Agriculture* from 1977 defines a community cannery as a facility that “promotes the preservation of seasonal garden surpluses for consumption during the nonproductive season”.³⁰ In addition to providing produce year-round the article also points out the benefits to the community through an opportunity for social interaction and to can fresh food at a low price point.³¹ “Community canneries were established during WWII to help women provide for their families. Almost every county in Virginia had a cannery”.³² Canneries were also often “supported by local school systems where they were typically used as educational tools for home economics”.³³ By the end of WWII according to a 1977 USDA publication there were over 3,800 community canneries in the US.³⁴ There are several resources from the early 20th century such as a 1919 pamphlet from the Texas Extension Service that detail the costs, managements and potential types of canneries. The government funded these canneries to help keep a stable food supply during the war. As the food system became more productive through mechanization the need for community canneries declined and the government pulled funding of the facilities.³⁵

B. Modern Day

According to the Virginia Cooperative Extension in 2011 there were 11 remaining seasonally operating canneries across nine counties in Virginia as shown in the graph on the following page. Ten of

³⁰ Aline F. Coffey, et al. 1977. Resurgence of community canneries. *Yearbook of Agriculture*: 372.

³¹ *Ibd.*

³² Linda Shockley. 2007. 'Putting food by' at the Callaway cannery. *Grit*.

³³ Donna Meade. "Virginia's community canneries." (2012).

³⁴ Andrew Jenner. 2014. Canned: A WWII era community cannery hangs on in rural Virginia. *Modern Farmer*.

³⁵ *Ibd.*

those operated by the government and one by a nonprofit. The author of the report, Donna Meade, argues that there is now a resurgence of interest in these remaining canneries as Virginians look to become more self-sufficient and save money.³⁶ Another article in the magazine *Modern Farmer* features a cannery in Keezletown, Virginia. Meade is cited as saying that “with gardening back in vogue, those community

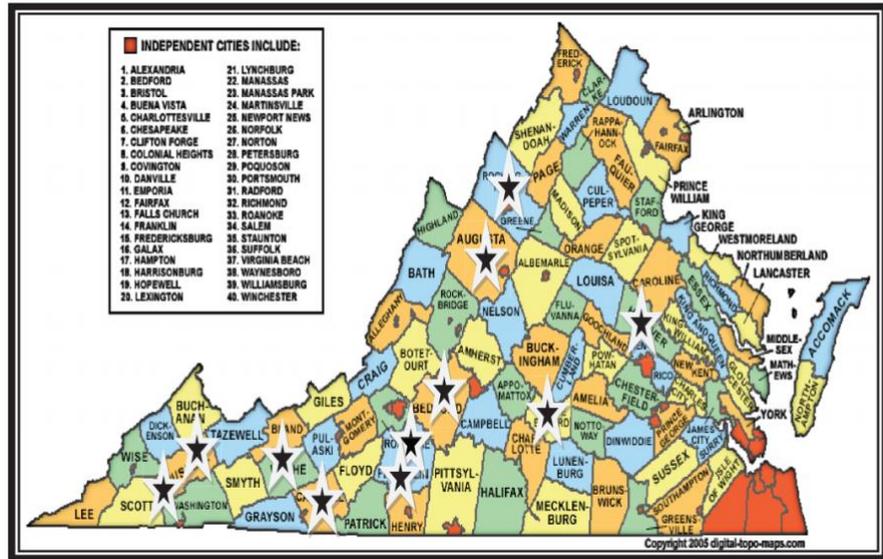


Figure 1: Location of canneries on map.

canneries that have hung on now represent a ‘tremendous asset’ – places where ‘communities comes together’ and learn to ‘hold onto ways that used to be.’” Many canneries no longer are funded by the government and have become more so like charities according to Rick James, a spokesman for the Horizons Learning Foundation. The article points out the challenges of rising costs to can and increasingly challenging regulations around food safety.³⁷

Majority of the canneries that exist today are designed as community canneries and for individual use. There are even guides on how to start a community cannery on websites such as PickYourOwn.org that detail the costs, regulations and other considerations involved.³⁸ This paper was written to discover whether a partnership with institutional buyers could help bring back the cannery and make use of local produce, bridging the production and price gap. Given that there is not currently an abundance of research on the topic, the following section contains an interview with Allie Hill, the Director of the non-profit Virginia Food Works (VFW), discussing the challenges and opportunities of canneries and commercial kitchens working with institutions. Virginia Food Works operates out of Prince Edward County Cannery & Commercial Kitchen in Farmville, Virginia, assisting farmers and food entrepreneurs to make foods for resale.

³⁷ Donna Meade. "Virginia's community canneries." (2012).

³⁸ "How to Start a Community Cannery or Canning Center," Pick Your Own, http://www.pickyourown.org/starting_a_cannery.htm.

C. Case Study and Interview³⁹

Allie Hill is a Charlottesville resident who was motivated to find a way to buy locally-made pantry staple items, such as tomato sauce, peanut butter and other canned goods. She was struck by the fact that many of the items being marketed as “local” were actually not being produced locally nor did they use local ingredients. The Virginia Department of Agriculture and Consumer Services (VDACS) has been working for years to market fresh, locally-grown produce as a “Virginia Grown” and it has been a very successful campaign for farmers.



Image Source: VDACS

As part of its marketing campaign, VDACS created an additional label specifically for advertising value-added foods, calling them “Virginia’s Finest” to signify that they are products from Virginia. Ms. Hill was excited about this program and decided to call many of the companies producing the products under the “Virginia’s Finest” label to see where they were getting their local ingredients. To her disappointment, she discovered that many of the products labeled as “Virginia’s Finest” were not actually made from ingredients sourced locally. She was told having Virginia-grown ingredients inside was not a requirement of the marketing campaign. The only requirement was that a participant must have an address in Virginia. Many value-added producers claimed that it was too expensive to source local ingredients or it was too difficult as local ingredients are seasonal and these companies needed to produce year-round in order to meet demand. Other value-added producers claimed to not have access to a processing facility to create their products so they ordered them from large, out of state food companies. Ms. Hill believed there had to be a way to connect local growers with the value-added market and began looking for opportunities to start a food processing center. She found Prince Edward Cannery, a facility with all the necessary equipment, but no one to run it. She then helped start the nonprofit Virginia Food Works in 2012. Working with the government of Prince Edward County, the owner of the Cannery, together they created what is now an active commercial cannery in Farmville, VA.

Challenge number one is volume. The canning equipment is not designed to meet the production of small-scale producers.

The Cannery is currently profitable but is funded primarily by county government support and relies heavily on donated labor. The main users or “clients” of the cannery are farmers and food entrepreneurs who utilize the space to make batches of their products. Virginia Food Works (VFW) also

³⁹ Allie Hill "Interview with Founder of Virginia Food Works." Telephone interview by author. March 22, 2018.

provides a “co-packing service” for busy farmers where VFW’s staff can make a value-added food product on behalf of the farmer, turning fresh produce into a ready to sell jar of sauce.

Given that the Cannery caters to both farmers and individual residents it is challenging to balance the equipment needs of its different user groups. “The equipment required to process foods on a large scale is very expensive and also requires large volumes of raw ingredients in order to be operated efficiently and affordably”.⁴⁰ The sharing of space and equipment between groups is an additional challenge for the Cannery. Obtaining funding to purchase specialized commercial equipment is also hard to find without a strategic plan to scale up production at the Cannery. Currently the facility is best suited for farmers who want to produce between 250 and 750 jars of product in one day. Even at this level of production the costs are still too high to be competitive with large-scale processors. “To compete with food service companies like US Foods and Sysco, the Cannery would have to grow to a much larger facility. This would require committed, long-term buyers of the final product as well as investors who see the value of having a Virginia-based food processing facility”.⁴¹

Challenge two is cost. The costs to produce on a small-scale as well as costs to acquire food safety certifications make it challenging to compete with established, large-scale producers.

Meeting the price point of large distribution companies is challenging for small-scale food processors. Foodservice providers often have contracts with large distributors such as Sysco and US Foods that use large-scale, value-added food suppliers who can produce in high volumes. This creates pricing that is too competitive for Virginia farmers to match. Ms. Hill gave the example of peeling garlic. From the perspective of foodservice companies and institutions the pre-peeled garlic sold by US Foods is a better alternative to the local, hand-peeled garlic by the cannery due to its significantly lower price point. Labor costs are the driving factor behind higher production costs for small batch products. These products also have different food safety requirements such as staff certifications and food inspections that make resale more challenging and further increase production costs.

⁴⁰ Allie Hill "Interview with Founder of Virginia Food Works." Telephone interview by author. March 22, 2018.

⁴¹ *Ibd.*

5 lbs. Hand-Peeled Garlic by Cannery staff	5 lbs. Pre-Peeled Garlic sold by US Foods
<p style="text-align: center;"><i>Labor \$12/hour</i></p> <p style="text-align: center;"><i>Equipment Rental \$10/hour</i></p> <p style="text-align: center;"><i>Fresh Garlic \$2.50/lb.</i></p> <p style="text-align: center;">$\\$12 + \\$10 + (\\$2.50 * 5) = \\34.50</p> <p style="text-align: center;">Total Price: \$34.50</p>	<p style="text-align: center;">Total Price: \$13.50</p>

Challenge three is infrastructure. The current food system is not designed to support the production, storage and transport of local products to large institutions.

The supply chain is the final major challenge for commercial canneries. The current food system is designed to meet the needs of large-scale producers. Supply chains are extremely complex and in order for a commercial cannery to supply a large institution like UVA new supply chain infrastructure would need to be created to support a more localized system. The process of getting food from the farm to the cannery to UVA is long and requires numerous food safety measures such as cold storage when the produce is received, in transit and stored depending on the product. Infrastructure is key for canneries to supply institutions.

These challenges with commercial production mostly do not apply to community canning or individual canning. Most canneries are subsidized by the local government as a public service for their residents. When an individual resident visits the Prince Edward Cannery to process foods for personal consumption, they sign a waiver that covers the food safety aspect of the process and they take on the liability of the product they are canning. The individual also only produces enough for their own purposes and is able to store and transport the product personally. From the research it is plausible that the community cannery is making a comeback but supplying to large institutions still has many challenges.

1. Cannery SWOT Analysis

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Addresses production gap by preserving summer produce to be saved for later date • Supports community by providing employment and support for food entrepreneurs • Provides social interaction for community members/individual canners • Creates access for consumers to high-quality, local value-added foods 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Challenging to create sustainable business model that is self-supporting • Machinery is expensive and not efficient at processing small quantities • Challenging to meet market price points while staying true to mission of helping small farmers • High costs: labor, machinery, plant • Lack of infrastructure to support storage and distribution of product
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Potential to be joint venture among Virginian universities to help increase local purchasing • Provides push to improve infrastructure for local food systems 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Large corporate distribution companies and farms • Changing food safety regulations

VII. A LOCALIZED SUPPLY-CHAIN

“In the early 1900s, nearly 40 percent of Americans lived on farms, compared with 1 percent in 2000, and much of the food bought and consumed in the United States was grown locally.⁴² Communities gained knowledge of the quality of foods through direct contact with farmers. Aside from canning, dehydrating, salting, or smoking, few foods were processed or packaged, and fruits and vegetables, fish,

⁴² Rich Pirog, et. al. Values-based supply chains: Strategies for agrifood enterprises of the middle. In *Food and the mid-level farm.*, eds. Thomas A. Lyson, G. W. Stevenson, 119. Cambridge, Massachusetts: The MIT Press, quoted in Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010.

and dairy products typically traveled less than a day to market.⁴³ For many foods, consumption was dictated by local seasonality”.⁴⁴

The rise of community canneries during WWII was followed by a food system shift from “local to national and global food sources...spurred by lower transportation costs and improvements in refrigerated trucking- reinforced transition to nonlocal food systems”.⁴⁵ The industrialization of food created an infrastructure built upon large scale farms and producers and massive volumes of food being produced to be sent all around the country. Now that consumers are demanding to know where their food comes from and seeking local, there is a need to create infrastructure for localized food systems that were left out during the industrial agriculture boom. Several movements account for this shift to local including the environmental movement, community food-security movement and the Slow Food movement”.⁴⁶ There are many dimensions to why people choose to eat certain foods and the current tide is carrying them back to local. In a 2006 national survey, four out of five respondents said they purchased fresh produce directly from farmers occasionally or always.⁴⁷ There are many definitions of local and considerations that consumers make when purchasing a product. An interesting characteristic of a product that may deem it as “local” is the idea of a “short food supply chain” (SFSC) that allows for greater transparency in the supply chain and helps the consumer better connect with where their food came from.⁴⁸ A community cannery would allow consumers to have more interaction with their food supply chain and be able to trace their product from shelf back through processing and ultimately to the farmer. While consumers are demanding more local foods, the system faces many challenges in meeting rising demand.

According to a report by the Economic Research Service on local food systems the principal barriers to market entry are “capacity constraints for small farms and lack of distribution systems for moving local food into mainstream markets; limited research, education, and training for marketing local food; and uncertainties related to regulations that may affect local food production, such as food safety

⁴³D., E. Giovannuci, et al. 2010. “Defining and Marketing ‘Local’ Foods: Geographical Indications for U.S. Products,” *Journal of World Intellectual Property*, Special Issue: The Law and Economics of Geographical Indications, Vol. 13, March 2010, as quoted by Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010.

⁴⁴ Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010. 1.

⁴⁵ *Ibid*, 8.

⁴⁶ *Ibid*, 2.

⁴⁷ J., D. Keeling-Bond, et al. 2009. “What Influences Consumer Choice of Fresh Produce Purchase Location?” *Journal of Agricultural and Applied Economics*, 41(1):61-74, as quoted by Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010.

⁴⁸ *Ibid*, 8.

requirements”.⁴⁹ Of these barriers the cannery is an example of the lack of infrastructure around distribution of local and regional food. “The local food supply chain lacks mid-scale, aggregation and distribution systems that move local food into mainstream markets in cost-effective manner”.⁵⁰ Farmers also have expressed that “regulatory and processing barriers to meat and value-added product sales present significant obstacles to increasing local sales”.⁵¹ They also expressed that there is a need for “more midscale food processing” in order to “improve efficiencies in institutional food preparation”.⁵² Ms. Hill mentioned many of these challenges in relation to the establishment of her cannery and believes that in order for a cannery to be successful in the current system, new infrastructure needs to be created to support local production, processing and distribution. In Charlottesville alone, there are many farms able to produce for the community, but for them to obtain the extra value from processing their product there are still remaining challenges present before that can become a possibility. The New England region is a pioneer in the space and has created a regional aggregation and distribution network to increase the capacity for local processing. The New England Food Processors Community of Practice (CoP) in 2016 “analyzed the unique characteristics of the various food processors in the region, comparing what is working well and what is most challenging. Together CoP members discovered ways that they can improve operations, increase institutional sales efforts, explore new marketing opportunities, and better support emerging processors.”⁵³ This group among other collaborative efforts around the country is one approach to building the infrastructure for a more localized supply chain.

A. The role of institutions in local food

There are many challenges for small-scale farmers to sell their products locally, but there are challenges for buyers as well. Institutional buyers cite the lack of proper distribution channels and

⁴⁹ *Ibid.*, 6.

⁵⁰ L. Day-Farnsworth, et al. 2009. *Scaling Up: Meeting the Demand for Local Food*, University of Wisconsin-Extension Ag Innovation Center and UW-Madison Center for Integrated Agricultural Systems, Madison, WI, as quoted by Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010. 25.

⁵¹ M. Ostrum. 2006. “Everyday Meanings of ‘Local Food’: Views from Home and Field,” *Journal of the Community Development Society*, Spring 2006, as quoted by Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010. 25.

⁵² L. Day-Farnsworth, et al. 2009. *Scaling Up: Meeting the Demand for Local Food*, University of Wisconsin-Extension Ag Innovation Center and UW-Madison Center for Integrated Agricultural Systems, Madison, WI, as quoted by Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010. 25.

⁵³ “Farm to Institution New England.” *New England Local Food Processors | Farm to Institution New England*. Accessed May 02, 2018. <https://www.farmtoinstitution.org/new-england-local-food-processors>.

complicated logistics as the main challenges to buying locally.⁵⁴ In the case of universities with foodservice providers, these providers often are sourcing food for large quantities of students. The foodservice providers desire reliable distribution and quantities of food and in the timeframes that they need it. Given that the systems are not in place to make purchasing local easy and in many cases even viable, there is a disconnect between the desire to purchase local and the actual feasibility of doing so. In a 2009 survey the School Nutrition Association (SNA) asked school food authorities about their local food purchasing practices. “Thirty-four percent of the 1,207 SFA members sampled answered yes, and 22 percent said that they did not, but are considering doing so...Hospital and foodservice administrators note that healthcare institutions can influence better eating habits through purchasing local foods for use in cafeteria or food-court service and patient meals”.⁵⁵ In addition to these findings there has been a general increase in farm to school programs from only 400 in 2004 to over 2,000 in 2009”.⁵⁶ In the report “Institutional Sustainable Purchasing Priorities” interviews conducted with food purchasers revealed that the primary focus is on cost, but if the consumer stakeholders desire local the buyer will commit to buy local if the cost is in line with their benchmarks.⁵⁷ The report also explains that food service providers often have preferred and authorized vendors that work with specific distributors. There are contracts between purchasers and distributors that often dictate how much food is bought from various vendors. These contracts can be an obstacle to purchasing local and are one reason that institutions that are self-operating and do not have a contracted foodservice provider often have more flexibility in food purchasing decisions. In regards to how a purchaser would introduce a local product the report explains, “if the purchaser found a sustainable product and wanted a distributor to carry that product, it was their responsibility to find other institutions in the area that might want that product to build up sufficient demand”.⁵⁸ In addition to this study a report by the organization Farm to Plate entitled, “Opportunities and Barriers to Greater Local Food Procurement in Vermont Higher Education Food Service” cited the “need for light processing and flash freezing...institutions demand lightly processed produce...few local

⁵⁴ R.A. Vogt and L.L. Kaiser. 2008. “Still a Time to Act: A Review of Institutional Marketing of Regionally-Grown Food,” *Agriculture and Human Values*, Vol. 25, pp. 241-55, as quoted by Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010. 25.

⁵⁵ Elizabeth Sachs and Gail Feenstra. Undated. *Emerging Local Food Purchasing Initiatives in Northern California Hospitals, Agricultural*, as quoted by Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010. 15.

⁵⁶ Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010. 16.

⁵⁷ Madeleine Pullman and Robin Wikoff. 2017. Institutional sustainable purchasing priorities. *International Journal of Operations & Production Management* 37, (2): 165.

⁵⁸ *Ibid*, 169.

farms have the capacity to do this” as a challenge for the institutions interviewed for their report to using local food.⁵⁹ These are some of the main barriers facing institutions that wish to purchase locally.

A cannery shared among the member universities of the 6 VA group (James Madison, George Mason, Virginia Tech, Old Dominion, Virginia Commonwealth, UVA) is one potential way to address some of these challenges. Through jointly investing and sourcing from a cannery the universities would help support the cannery to reach economies of scale in order to meet necessary price points and volumes. A cannery could also help universities to reach their sustainability goals. In the case of UVA sourcing locally could help minimize food transit distances. In terms of the local community, “empirical research has found that expanding local food systems in a community can increase employment and income in that community”.⁶⁰ While when this idea was initially proposed it sounded like a good solution to a big problem, there is still a long way to go.

VIII. CONCLUSION

This research finds that there is an opportunity for both farmers and institutions in localized value-added production through the construction and support of local canneries. The trend currently is a rise in canneries for individual processing and small food entrepreneurs, but there has yet to be a rise in canneries for the purposes of institutional use. In order to create commercial canneries there are several areas prime for innovation in the food system. The first is a solution for cold storage and transportation that is lower cost and catered to small-scale farmers. The second is finding a way to aggregate enough produce from local farmers to work with the current canning equipment or to development new equipment suited for smaller volumes. Lastly there is a need for more communication between buyers and suppliers and renegotiating of contracts to better integrate local purchasing into food service provider metrics.

In the case of UVA, the university has ambitious benchmarks for the future and is using the AASHE STARS system to determine the progress of food and beverage purchasing. As of 2018 the university has a gold rating under the STARS system and purchased a little over 8% locally out of the total spend for the year of 2017. Going forward the Sustainable Food Strategy Task Force plans to set concrete benchmarks for improvement year to year and is working on several projects to work with more local producers detailed in the Appendix A.

⁵⁹ David Conner, *Opportunities and Barriers to Greater Local Food Procurement in Vermont Higher Education Food Service*, PDF, Farm to Plate, March 2017.

⁶⁰ Steve Martinez, et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010. 7.

Community canneries in their current state have many challenges to supply institutions, but the opportunity for farmers to increase revenues through processing their products and buyers to reach their institutional buying goals is possible with the right infrastructure to support local canning facilities. Cooperation across many stakeholders is vital to this process as well as increased transparency not only for retail consumers, but also institutions working with food service providers. Going forward there are numerous opportunities to continue this research and to determine how to build the needed infrastructure to close the production and price gap to improve farmer livelihood, environmental well-being, local communities and student satisfaction with food service providers.

IX. APPENDICES

A. Current Projects at UVA

UVA has a goal of reaching 50% sustainable purchasing by 2034. In order to achieve this goal, the Sustainable Food Strategy Task Force has been working with Aramark, UVA's food service provider, to find ways to increase local purchasing gradually each year. There are two current projects that will help UVA reach its goals. The first is a blended mushroom burger. This burger will be processed by a local abattoir called Seven Hills. Seven Hills sources grass-fed beef from local Virginian farms and has agreed to blend this beef with mushrooms in order to help UVA decrease its nitrogen footprint. The burger will be 80% beef, 20% mushrooms and has received positive feedback on taste by student taste demos in comparison to the current burger. This project is an example of a single-ingredient substitution to help increase local purchasing. By focusing on beef patties, the university was able to come up with a sustainable substitution that can feasibly be implemented at all of UVA's residential dining halls. The second project is focused on dairy. UVA is working with JMU to source from a Virginian dairy operation called Homestead Creamery. This deal is still in the process given the logistical challenges of transporting and storing dairy, but if an arrangement is found this will be another substitution effort that could make a significant impact on UVA's local purchasing goals. Both of these projects will also require partnerships among Virginian universities and are pilot projects to see if these partnerships could help increase local purchasing in Virginia as a whole and lead to other joint projects such as the cannery.

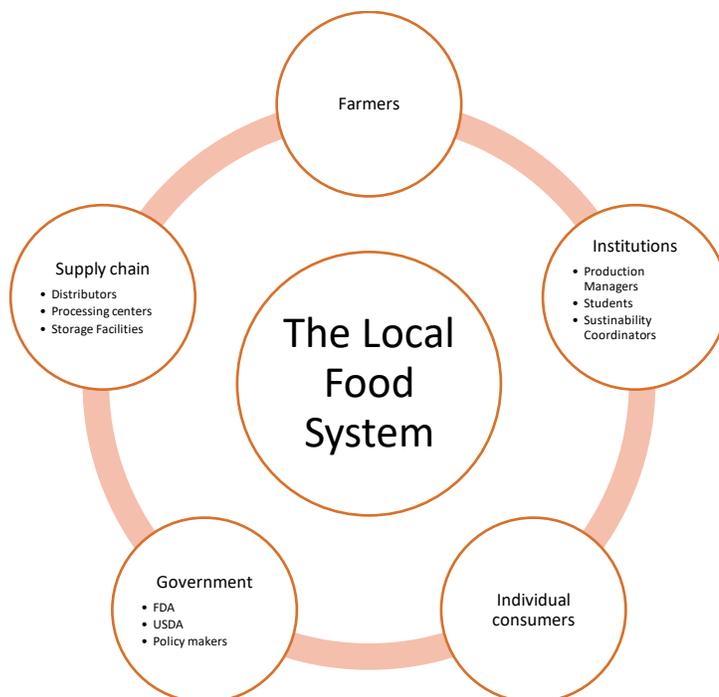
B. VA Food Organizations

- Virginia Food Works
- Virginia Department of Agriculture and Community Services (VDACS)
- Sustainable Food Strategy Task Force at UVA
- The Food Collaborative
- 6VA (JMU, GMU, UVA, VT, ODU, VCU)

C. VA Canneries⁶¹

- Carroll County Cannery- Hillsville, VA
- Callaway Community Cannery- Callaway, VA
- Glad Hill Community Cannery- Glade Hill, VA
- Hanover County Cannery- Ashland, VA
- Keezletown Community Cannery- Keezletown, VA
- New London Community Cannery- Bedford, VA
- Prince Edward County Community Cannery- Farmville, VA
- Castlewood Cannery- Castlewood, VA
- Honaker Cannery- Honaker, VA
- Stuarts Draft Community Cannery- Stuarts Draft, VA
- Wythe County Community Cannery- Wytheville, VA

D. Stakeholder Map



⁶¹ Donna Meade. "Virginia's community canneries." (2012).

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