

Aggregation and Kentuckiana's Local Food Economy: A Literature Review

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Executive Summary of Aggregation and Kentuckiana’s Local Food Economy: A Literature Review

Purpose

Considerable groundwork has been laid related to efforts to strengthen the Kentuckiana regional food economy over the last 10 years. As part of these efforts, Louisville Metro Government, the University of Kentucky, Seed Capital Kentucky, Community Farm Alliance, the Kentucky Center for Agriculture and Rural Development (KCARD), and other regional foundations and entities have collectively conducted several noteworthy studies during the past 10 years regarding local food production and demand in Kentucky and Southern Indiana. While many studies have generated insights about our regional food system, few have formally assessed the collection of proposed recommendations from these studies to inform a comprehensive, informed plan of action with regard to aggregation at the regional level. By offering an in-depth snapshot of the Kentuckiana food system, this literature review consolidates learnings to inspire future action by analyzing the current state of the wholesale food system, barriers cited by researchers, proposed solutions to barriers, and recommended best practices for institutional players.

Background

In April 2016, three individuals in the Louisville, Kentucky area interested in the development of the local food market came together to form High South Foods, a Limited Liability Corporation, to investigate the Kentuckiana regional food economy and determine what opportunities might exist to advance the growth of this market--especially as the growth of wholesale opportunities might benefit small to mid-sized producers. The founders of the Kentuckiana Food Aggregation Project approached this work with a commitment to several key principles. These principles included equitable treatment of agricultural producers and the development of an enterprise that could exist without continued infusion of external fund-raising. Ultimately, the Kentuckiana Food Aggregation Project seeks to provide a missing link in the regional food system in the Kentuckiana area by examining the conditions necessary for an aggregator and retailer entity with producer interests in mind while also providing a roadmap for the development of such an entity.

The Kentuckiana Food Aggregation Project coordinators succeeded in securing funding to investigate this initiative through the U.S. Department of Agriculture (USDA) Local Food Promotion Program grant, awarded in September 2016. Following the announcement of this award, the Kentuckiana Food Aggregation Project partners worked with the Kentucky Center for Agriculture and Rural Development (KCARD) to launch the project. In addition to a feasibility study for a regional aggregation entity, business plan development, and relationship building among producers, buyers, and other members of the regional food system, one of the key deliverables of the Kentuckiana Food Aggregation Project was the following literature review of the relevant studies of local food, especially those studies concerning the Kentuckiana region. This literature review informed the development of a survey for producers and helped determine the target area selected for the remainder of the project.

Methodology

The Kentuckiana Food Aggregation Project coordinators began their review of the literature in a collaborative way, seeking guidance on which studies to consult from identified partners, advisory board members, and prominent figures within the Kentucky academic community. High South partners read 13 studies. From these studies, the following were consulted:

- The Louisville Local Food Demand Analysis (2012)
- Local Food for Local Farmers Making Local Decisions (2016)
- Fayette County Local Food Demand Assessment (2015)
- Building Louisville's Local Food Economy: Strategies for Increasing Kentucky Farm Income through Expanded Food Sales in Louisville (2008)
- Grasshoppers Distribution: Lessons Learned and Lasting Legacy (2015)
- First Processed Produce in Central Kentucky: A Pre-Feasibility Study (2016)
- Analyzing Healthy, Local Food Systems: A Case Study of Owensboro, Kentucky (2013)

Once recommended studies were identified, the Kentuckiana Food Aggregation Project coordinators created a matrix (Appendix A) to assist in the collection of relevant information. Each study was assessed for its added contributions to better understand the following items: central research questions, methodology, regional context, analysis and results, key conclusions, and implication for wholesale marketing for small to mid-sized producers.

Findings & Conclusions

This study explores recent relevant findings specific to the Kentuckiana region as it relates to demand, production, barriers to wholesaling of local food, and recommendations from the literature. Significant findings from the existing literature are listed below:

I. Demand

- In 2008, researchers determined that there was a \$1.6 billion demand for food for at-home consumption (which included an estimated demand of \$137 million for fresh produce and \$234 million for meat) and a \$1.39 billion demand for food away from home (Market Ventures, Inc. and Karp Resources, 2008, p. 24-25). It was then estimated that consumers purchase \$100 million a year in local products and are interested in purchasing an additional \$158 million (Karp Resource, 2012, p. 44). Similarly, they concluded that commercial buyers spend \$214 million on local products and are interested in spending an additional \$139 million, bringing the total possible demand for commercial purchasing to \$353 million (Karp Resources, 2012, p. 44).
- A study commissioned by the Berry Center highlighted a contradiction in the demand figures generated in the *Louisville Local Food Demand Analysis* (above) and 2012 agriculture census data and offered several possible reasons why the numbers could be so different:
 - Missing voices from larger channels (distributors, restaurants, schools, etc.)

- Census data asks about direct farm impact while the demand study addressed consumer and commercial buyer level sales
- Census data on sales would be more likely to contain underreported figures while the demand study would likely contain overrepresented sales data
- Demand study took a regional approach while Census data centers only on Kentucky

II. Production

- Farmers grow much less produce for wholesale in Kentucky than surrounding states. As such, producers find difficulty in planning for wholesale and accessing larger markets (Brislen et al., 2016, p. 4). The overall statewide reality that there are fewer acres of produce in production in Kentucky despite a sizeable farming population suggests that significant barriers to expansion and scaling up of produce operations in Kentucky have yet to be identified or overcome. (Brislen et al., 2016, p. 5)
- While it is clear from the existing literature that direct sales play a key role in producer sales, researchers have also explored producer use of and interest in wholesale channels as sales outlets (the second strategy noted by the *Fayette County Local Food Demand Assessment*). Researchers found that “a significant percentage [of producers] indicated an interest in increasing their sales to schools and institutions wholesale channels, and through CSA shares” (KCARD, 2016, p. 60). This interest in increasing sales in wholesale markets was articulated by 47% of the regional producers surveyed (150 farmers).
- Fruit growers have more interest and optimism related to expansion and thus have specific plans for expanding production while vegetable producers had no clear plans for expansion of produce production for wholesale (Brislen et al., 2016, p. 7).
- De facto, producer-led aggregation efforts exist throughout the region. Producers are currently “bringing together neighboring producers’ smaller harvests together to scale up supply” (Brislen et al., 2016, p. 4), stemming from “strong preference to act as their own sales agents and avoid what they perceived to be unnecessary markups incurred when selling through existing distribution businesses” (Brislen et al., 2016, p. 13).

III. Barriers to Wholesaling of Local Food

- Challenges specific to aggregation were identified and analyzed for the purpose of this study. Those identified barriers were grouped into the following categories: lack of regional capacity, historical transition from tobacco farming, lack of consistent price premiums, sufficient supply of desired local products at the wholesale level, production challenges, wholesale practices and requirements, perception at the producer, buyer and consumer levels, and a lack of information sharing and communication among different players of the regional food economy.

- Producers are the most vulnerable of the key players in the regional food economy, as the investments they make in production have direct impacts on their ability to sustain their livelihood and support their families. While data confirming increasing regional demand for local products provides some encouragement for participation in wholesale channels, ultimately the experience of unreliable volume and timing of produce orders serves to dissuade producers from accepting the risk involved in scaling their operations for wholesaling (Brislen et al., 2016, p. 3). Also, because direct-to-consumer sales channels have proven to be consistent and more profitable, regional farmers today are less encouraged to grow products for wholesaling. Studies have found that “farmers who were once set on being wholesale producers have realigned their business to focus on CSA and direct sales because they are more reliable and offer a premium compared to wholesale” (Brislen et al., 2016, p. 15).
- The most common barrier identified by buyers in the literature reviewed was a lack of sufficient supply of desired items at a competitive rate. The literature emphasizes the need for further exploration of barriers related to third-party food safety audits and requirements. Questions of removing certification-related barriers to small and mid-sized producers prove to be crucial in efforts to build a more robust local food economy.
- Institutional buying practices of only working through specific vendors—more specifically, pre-approved distribution companies—can adversely affect producers who are currently working to gain viable access to larger wholesale channels. The lack of institutionalized policies and procedures for purchasing of local products leaves the regional wholesale system vulnerable to changes in overall institutional demand as companies experience staff turnover.
- Multiple studies emphasized the need for systems and infrastructure to be strengthened and added to the Kentuckiana food economy. Three studies cited a lack of distribution services and limited cold-chain storage and transport capacity as barriers to wholesaling.
- Perceived demand for local products at the consumer level is out of alignment with concrete support for local purchasing—a reality that has implications for local food demand at the institutional level.
 - Producers largely view the demand for Kentucky farm-sourced products as unreliable and are hesitant to invest heavily in wholesaling as a sales strategy (Brislen et al., 2016, p. 7).
 - 67% of producers surveyed in 2016 agree that there exists a high level of unmet demand for local food, but believe that buyers and consumers make purchasing decisions based on price alone and are unsure of the strength of the demand for local products (KCARD, 2016, p. 2).
- The lack of effective communication at various levels of the food system was commonly cited as a barrier to increased participation in wholesale markets. Several of the studies reviewed cited a lack of effective and frequent communication between producers and buyers as a critical issue

preventing greater participation in the wholesaling of local products. Without trust and strong communication channels between producers and buyers, each of the key players will continue to act without full knowledge of the needs, intentions, and capacities of the other.

VI. Recommendations from the Literature

- While many barriers to wholesale market participation were identified, researchers have made many recommendations with regard to strengthening the local food economy in the studies published over the last 10 years. Those recommendations related to supply support and associated infrastructure, aggregation opportunities and strategy, and additional support offerings.
- Tied directly to previous discussions of price premiums and security for producers interested in wholesale expansion, much of the literature (*Fayette County Local Food Demand Assessment*, *Louisville Local Food Demand Analysis*, and *Analyzing Healthy, Local Food Systems: A Case Study of Owensboro, Kentucky*) recommend supporting supply side capacity and associated infrastructures as well as financial investment at the producer level.
- *First Processed Produce in Central Kentucky* authors suggest that while larger producers may be able to expand to enter wholesale markets without much difficulty “strategies or institutions that aggregate items from small/medium farmers may potentially be cost-competitive” so long as coordination and trust exists between producers and the scope of operation is clear (FP, p. 11). Their recommended approach to aggregation is to rely on a distribution enterprise that initially develops wholesale production through alternative smaller wholesale markets and gradually increases its larger institutional supply (FP, p. 16).
- Along with recommendations specific to aggregation, many studies consulted highlighted gaps in the Louisville and Lexington regional food system that could be filled by businesses that provide support the overall system. While not the main focus of an aggregation entity, the following items were noted as benefits needed for small to mid-sized producers interested in access larger markets: relationship building among producers, buyers, distributors, storytelling, education (technical, business, marketing, and consumer), and assurances that demand for local food is real.

Implications for Future Action

While the reviewed studies extensively document regional context, barriers to wholesale market participation, and recommendations for further growth, the region’s current food system has failed to adequately provide an accessible and viable wholesale market for small scale producers to sell their products and for local institutions to purchase substantial quantities of locally produced food from farms and wholesale distributors.

With insights generated through studies on the Kentuckiana food economy in the last 10 years, the Kentuckiana Food Aggregation Project moved forward with a feasibility study informed by experts on the regional food economy. Without the work of compiling existing research on regional barriers to aggregation, production outlooks, insights on demand for local products, and data-driven recommendations for action, the unique findings of the Kentuckiana Food Aggregation Project—in its engagement with buyers and producers—may have failed to both build on the known realities of the region and to contribute to efforts in creating a more sustainable, just, and equitable regional food system that values producers.

In sharing the relevant research that helped frame the scope of the Kentuckiana Food Aggregation Project, the project managers and authors of this literature review hope to inspire other efforts that will respond to the known needs, challenges, and opportunities within the Kentuckiana local food economy.

I. Introduction and Project Background

In April 2016, three individuals in the Louisville, Kentucky area interested in the development of the local food market came together to form High South Foods, a Limited Liability Corporation, to investigate the Kentuckiana regional food economy and determine what opportunities might exist to advance the growth of this market. The founders of the Kentuckiana Food Aggregation Project approached this work with a commitment to several key principles. These principles included equitable treatment of agricultural producers and the development of an enterprise that could exist without continued infusion of external fund-raising. Ultimately, the Kentuckiana Food Aggregation Project seeks to provide a missing link in the regional food system in the Kentuckiana area by examining the conditions necessary for an aggregator and retailer entity with producer interests in mind while also providing a roadmap for the development of such an entity.

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II. Purpose

Considerable groundwork has been laid related to efforts to strengthen the Kentuckiana regional food economy over the last 10 years. This review of existing literature on the Kentuckiana regional food economy seeks to offer an in-depth snapshot of the Kentuckiana food system as it relates to aggregation and to be a resource to other entities interested in the creation of infrastructure needed to support producers.

III. Methodology and Central Aims of Literature Review

Louisville Metro Government, the University of Kentucky, Seed Capital Kentucky, Community Farm Alliance, the Kentucky Center for Agriculture and Rural Development (KCARD), and other regional foundations and entities have collectively conducted several noteworthy studies during the past 10 years regarding local food production and demand in Kentucky and Southern Indiana. These studies have laid the groundwork for an entity to take an informed and collaborative approach to address the need for improving access to wholesale markets for small farmers.

The Kentuckiana Food Aggregation Project coordinators began their review of the literature in a collaborative way, seeking guidance on which studies to consult from identified partners, advisory board members, and prominent figures within the Kentucky academic community. High South partners read 13 studies. From these studies, the following were consulted:

***The Louisville Local Food Demand Analysis* (2012)**

A qualitative and quantitative analysis of demand for local food in Louisville Metro/Jefferson County, Kentucky. The analysis was prepared by Karp Resources for both non-profit Seed Capital Kentucky and Louisville Metro Government to assist regional actors in creating linkages between consumers and producers. This study offered insights on the amount of local food currently purchased in Jefferson County and suggested that the demand for local food far outweighs the current supply. Study authors organized their recommendations around their discovered needs for 1) strategic efforts to expand local food access, 2) increased trust between buyers and producers, 3) new aggregation, processing, and distribution infrastructure, 4) greater support (technical, business, marketing, and educational) for producers, commercial buyers, and consumers, 5) tracking of incremental growth and impactful stories, and 6) assurance of demand.

***Local Food From Local Farms Making Local Decisions: A Supply-Side Examination of the Louisville Foodshed* (2016)**

Louisville Metro Government and The Berry Center came together in 2014 to learn what farmers in the Louisville regional food economy think about the market and what farmers need in order to produce for this market. With the 2012 findings that there is an unmet regional demand for local food in the amount of \$158M, questions of production and supply-side experiences remained unknown. KCARD surveyed 319 producers, interviewed 22 area cooperative agents, and conducted two focus groups with the Berry Center.

***Fayette County Local Food Demand Assessment* (2015)**

In 2015, the University of Kentucky Food Connections sponsored a study by UK researchers to examine the current landscape of local food demand in the Lexington area in different marketing channels. Over 40 Kentucky Proud entities were interviewed or surveyed. The study outlines two main strategies that are being employed by producers entering the local food system: 1) Focus on small-scale diversified production and direct-to-consumer relationships and 2) Produce larger volumes of a few items for wholesale. The decision to follow one strategy over another (or the mix if the producer is involved in both) is shaped by where the producer finds viable market demand, a return over their costs of production, and the level of trust found in the relationship between the producer and the buyer. The authors also stated that growth in purchasing of local food in the area is expected to increase from a current level of \$14.2 million to between \$20-\$24 million in 2020. Respondents indicated that growth would be higher if adequate supplies of certain items were available at a competitive price. This appears to be

especially true in higher value items, such as dairy and meats. Purchases of local food are also challenged by incentives and policies in place among larger institutions to channel purchases toward dedicated suppliers.

***Building Louisville's Local Food Economy: Strategies for Increasing Kentucky Farm Income Through Expanded Food Sales in Louisville* (2008)**

The premise of this study is that Louisville, as the state's largest population center, has the potential to increase substantially the amount of food purchased from Kentucky farmers. The primary goal of the study was to identify strategies that will most effectively increase Kentucky farmer income through new or expanded sales to Louisville consumers, businesses and institutions. The study authors attempted to answer the following questions:

- What are the ways currently that food enters the Louisville economy, what is the magnitude of demand, and how much is locally grown?
- What is the current status of agriculture in Kentucky, particularly the region around Louisville?
- What are the marketing channels for Kentucky farmers in Louisville?
- Which of these marketing channels offer the best opportunities for increasing sales (in the short, medium and long term)?
- What policies, programs or facilities are needed to encourage or facilitate these new sales?
- How can changes to farm income that result from these policies, programs or facilities be measured?

***Grasshoppers Distribution: Lessons Learned and Lasting Legacy* (2015)**

This lessons learned document by researchers at the University of Kentucky with other contributors including KCARD staff, examined the questions of what happened during the operation of Grasshoppers, a privately owned aggregation and distribution company established in 2006 that closed its doors and ended its purchasing of regional product in 2013. Through focus groups, interviews, and analysis of financial statements, the study's authors determined that changes in the business model and top management, combined with serial income shortfalls preventing the entity from both covering expenses and going after new opportunities, were some of the reasons for the ultimate failure of the business. Notably, however, the business did provide marketing options for 70 regional producers, many of whom continued to market in the region using technical and marketing knowledge gained from their experiences at Grasshoppers.

***First Processed Produce in Central Kentucky: A Pre-Feasibility Study* (2016)**

This qualitative and quantitative study of the existing supply for wholesale processed produce, existing demand for basically processed food products, and preliminary assessment of

benchmark pricing for Kentucky-grown produce assessed the need for additional services or other efforts to provide first-processed produce items in the central Kentucky region. To determine demand, authors consulted a FY2015 comprehensive list of local and Kentucky Proud products procured by UK dining, a geo-coded inventory of food system intermediaries and infrastructure, and 18 interviews with purchasing agents in the Bluegrass region. Data collected by the Lexington area bluegrass local food supply study and interviews with 12 producers informed the study's supply assessment. 2012 USDA Census of Agriculture data at three levels--state, 23 counties comprising central Kentucky, and 7 county local levels—contributed to the quantitative assessment of current produce production.

***Analyzing Healthy, Local Food Systems: A Case Study of Owensboro, Kentucky* (2013)**

This study reviews the existing literature on local food system models in an effort to gain greater clarity of what the “ingredients” of a healthy local food system are. A case study was used to explore Owensboro, Kentucky, a city located in Daviess County in the western part of the state. The central aim of the study is to identify the ingredients of a healthy, local food system and reflect on what elements could be a part of the Owensboro context. The author led interviews with state actors, key players in the Owensboro food system, producers, and non-producers, created a literature review, and conducted a content analysis of USA Today and the Owensboro Messenger-Inquirer. This study offers detailed and relevant insights on the make-up of the local food system in Owensboro.

Once recommended studies were identified, the Kentuckiana Food Aggregation Project coordinators created a matrix (Appendix A) to assist in the collection of relevant information. Each study was assessed for its added contributions to better understand the following items:

- Theoretical and conceptual framework(s)
- Central research questions and hypotheses
- Research methodology
- Region
- Analysis and results
- Assessment of current production levels and production trends
- Number of farm and ranch operations reporting an intention to wholesale local foods
- Expressed interest in aggregation facilities
- Marketing channel identification
- Market locations and requirements
- Outlook for production
- Current storage practices
- Institutional demand
- Customer expectations
- Existing regional outlets for local food and attributes
- Key conclusions
- Implications for future research
- Praxis implications
- Gaps in research

Key findings were then shared with KCARD and incorporated into subsequent feasibility study parameters and instruments. The insights gained through this process directly influenced the definition of the study area, inspired questions asked of both buyers and producers during feasibility study surveys to uncover new findings, and served as a strong foundation for insights gained through the feasibility study.

Producer Advisory Board members also reflected on the findings of the literature review in a guided discussion. This discussion resulted in the identification of questions for buyers that were most relevant to producer needs.

Central Aims

While many studies have generated insights about our regional food system, few have formally assessed the collection of proposed recommendations from these studies to inform a comprehensive, informed plan of action with regard to aggregation at the regional level. By offering an in-depth snapshot of the Kentuckiana food system, this literature review consolidates learnings to inspire future action by analyzing the current state of the wholesale food system, barriers cited by researchers, proposed solutions to barriers, and recommended best practices for institutional players.

IV. Kentuckiana Regional Food System Development

Demand

1. Louisville Region

Building the Local Food Economy (2008), one of the older studies the Kentuckiana Food Aggregation Project consulted, painted a full picture of the demand for all food—not just local food—within the Louisville region. This foundational understanding of the demand for food both for at-home consumption and away-from-home consumption has influenced many of the more recent discussions of demand within the Kentuckiana region.

The authors assert that in 2007, Louisville’s 700,000 residents represented a total demand for food at the consumer level of approximately \$3 billion per year (Market Ventures, Inc. and Karp Resources, 2008, p. 5). Based on the demographic profile of Louisville residents and typical spending patterns calculated from the Bureau of Labor Statistics’ Consumer Expenditure Survey data, researchers determined that there was a \$1.6 billion demand for food for at-home consumption (which included an estimated demand of \$137 million for fresh produce and \$234 million for meat) and a \$1.39 billion demand for food away from home (Market Ventures, Inc. and Karp Resources, 2008, p. 24-25). While the data is now almost a decade old, these figures serve as important elements in understanding the demand of the Louisville region as a whole.

Building upon the foundational insight that Louisville’s total demand for food at the consumer level is approximately \$3 billion per year, Louisville government officials and non-profit local food advocates then wanted to understand how much of the overall demand for food could be translated into demand for local products. In 2012, Karp Resources conducted the *Louisville Local Food Demand Analysis* to offer insights about the amount of local food being purchased and concluded that the Louisville region is experiencing unmet demand for local products that outweighs the supply of local food available for purchase.

At the consumer level, Karp Resources estimated that consumers purchase \$100 million a year in local products and are interested in purchasing an additional \$158 million (2012, p. 44). Similarly, they concluded that commercial buyers spend \$214 million on local products and are interested in spending an additional \$139 million, bringing the total possible demand for commercial purchasing to \$353 million (Karp Resources, 2012, p. 44). Moreover, because “much of the food the commercial sectors purchase will be handled, transformed, and resold in a variety of outlets,” the authors further speculated that the \$353 million in local food purchasing could contribute an estimated \$800 million to the local economy (Karp Resources, 2012, p. 44).

The findings of this analysis have been widely reviewed and disputed. Within the analysis itself, study authors were quick to point out the limitations of their work. Issues with response rates among buyers and distributors surveyed seemed to be one of the largest areas of weakness: only 75 out of over 3,200 commercial buyers identified responded to surveys and only 3 distributors were surveyed (Karp Resources, 2012, p. 10-11).

Subsequent studies on the Louisville regional food system also explore the validity of the claims made within the *Louisville Local Food Demand Analysis*. One of the studies that most directly respond to the findings of the 2012 demand analysis is the 2016 *Local Food for Local Farmers Making Local Decisions* report prepared for the Berry Center. This report was in part conducted to explore the findings about the demand for local products within the Louisville regional food economy from the perspectives of the producers. After outlining the key findings of the 2012 *Louisville Local Food Demand Analysis*, the report authors wonder:

...[H]ow unmet was this demand? Was this demand real? If there was such sufficient demand for local foods, why were people not clamoring for the opportunity to become farmers and take advantage of the demand? Why are farmers in the region not taking up the imperative of serving this local market? How much were the conditions placed on this demand (most notably related to price, quality, and product consistency) determining the nature of the demand and therefore the producer response. These studies highlighted the needs of producers and heightened the awareness of the tremendous potential created by the strong urban demand for

the agricultural producers in the region (Kentucky Center for Agriculture and Rural Development [KCARD], 2016, p. 9)

In addition to exploring the depth of the demand previously stated and reiterating the opportunities available to local farmers should this demand be proven, KCARD also highlighted a contradiction in the demand figures generated in the Local Food Demand Analysis and 2012 agriculture census data and offered several possible reasons why the numbers could be so different.

KCARD authors summarized the findings of the 2012 *Louisville Local Food Demand Analysis* and then compared direct sales figures published in the 2012 Agriculture Census data, saying:

The 2012 study estimated current spending by local consumers on local foods of \$100 million and by commercial buyers of \$214 million. Purchases by consumers and buyers would increase by another \$297 million if product was available and various barriers were overcome, according to the study. The 2012 Agriculture Census arrived at a starkly different picture for direct food sales of producers in the 23-county region, with just \$4.7 million in direct sales reported by farmers, a 15% increase over the same sales in 2007. (2016, p. 9)

The report for the Berry Center suggests that several factors contributed to such starkly different findings with regard to the demand and actual reported sales. They reason that 1) because the survey asks only for direct sales to consumers, the Census data may not include sales information from larger channels such as distributors, restaurants, and schools, 2) the Census data asks about direct farm impact while the scope of the demand study addresses sales at the consumer and commercial buyer level and including additional markups at every level of purchase, 3) Census data on sales would be more likely to include under-reported figures while the demand study would be more likely to contain over-reported sales data, and finally 4) Census data only details food purchases from within Kentucky while the demand study took a regional approach and included Indiana farms as well as non-farmers using Kentucky products (KCARD, 2016, p. 64).

Despite some of its disputed claims, however, the 2012 *Louisville Local Food Demand Analysis* remains a frequently cited piece about the Louisville local food economy. Its findings have dramatically shaped the discussion about the sales potential for local products.

2. Estimated Demand for Local Food in Fayette County, Kentucky

Exploring the demand for local products in the Lexington, Kentucky area, the *Fayette County Local Food Demand Assessment* also made significant contributions in the collective understanding of the demand for local food within Kentucky. Researchers interviewed major purchasers in Lexington and producers who sold directly to residents of Fayette County in 2014. Purchasers were asked to share their current

(2014) and anticipated (2020) spending on Kentucky products, challenges faced in sourcing local food, and areas of opportunity to strengthen the Lexington regional food economy (Rossi et al., 2015, p. 2).

Based on interviews with buyers and producers, the researchers concluded that Lexington buyers purchased an estimated \$14.2 million of Kentucky food products in 2014 and expect that purchasing of Kentucky products will rise to \$20-\$24 million per year by the start of 2020 (Rossi et al., 2015, p. 3). Taking into account the resale of Kentucky food products as they move through market channels, the *Fayette County Local Food Demand Assessment* suggests that end users purchased approximately \$34.1 million in local food products in 2014 and expect end-user purchasing to be at least \$51 million in 2020 (Rossi et al., 2015, p. 3). Spending across various sales channels can be seen in the chart below.

Table 1. Purchasing by Market Channel

	2014 (millions)	2020 (millions)	Annual Growth
Restaurants	\$5.5	\$7-9	5-10%
Institutions	\$1.5	\$2.5	5-10%
Retail	\$3	\$4 - 4.5	5%
Hotels	\$1	\$1.3	5%
CSAs/Farmers Markets	\$3.2	\$5.2	5-15%
Total	\$14.2	\$21.1	

Table 2. Total Consumer Purchases from Market Channel

	2014 (millions)	2020 (millions)
Restaurants	\$18.3	\$26.8
Institutions	\$5	\$8.3
Retail	\$4.2	\$6.4
Hotels	\$3.2	\$4.3
CSAs/Farmers Markets	\$3.2	\$5.2
Total	\$34.1	\$51

3. Segments of the Louisville Market

While this review of the literature will discuss relevant insights related to aggregation best practices in the Louisville region in later sections, it is important to note the demand for Louisville regional food products as experienced—and some may argue created—by Grasshopper Distribution Company.

In the 2015 study *Grasshoppers Distribution: Lessons Learned and Lasting Legacy*, researchers sought to document the key challenges faced by Grasshoppers as well the impact it continues to have on Kentucky agriculture and the regional food economy. One of the central claims the study authors make is that Grasshoppers helped to grow the market for regional food and that their work to build consumer demand “accomplished important foundational work for the Kentucky food system” (Brislen, Woods, Meyer, & Routt, 2015, p. 11). Their work to grow consumer demand for local food products can be seen

in their rising sales which grew steadily “from \$40,000 in 2007 to \$550,000 in 2010” and hovered in the \$900,000 range prior to its closing in 2013 (Brislen et al., 2015, p. 11). Grasshoppers’ sales from 2013 were \$963,058, demonstrating this sales avenue’s significant contributions in making local food purchasing on a larger scale a reality and offering a quantifiable amount that feeds into the overall demand for regional food products that exists in Louisville (Brislen et al., 2015, p.11).

Production Realities and Prospects

With a deeper understanding of the demand for local products in the Kentuckiana region, it is equally important to discuss the current state of production as it relates to expressed demand. This section will address study findings and data related to the amount of food produced for wholesale markets, land use, sales, plans for production expansion, and infrastructure that currently support production and producers’ access to larger wholesale markets.

1. Amount of Food Produced for Wholesale and Acres in Production

One of the more striking facts that emerged from the existing literature related to regional production of food relates to the amount of food produced for wholesale in Kentucky. Authors of *First Processed Produce in Central Kentucky* (2016) note that farmers grow much less produce for wholesale in Kentucky than surrounding states. As such, producers find difficulty in planning for wholesale and accessing larger markets (Brislen, Rossi, & Stancil, p. 4).

Tied to the limited amount of produce cultivated for wholesale, is the overall statewide reality that there are fewer acres of produce in production in Kentucky despite a sizeable farming population. The *First Processed Produce in Central Kentucky* authors interpret this finding as both a signifier of challenges and possible opportunity for growth for Kentucky farmers, writing:

That Kentucky has so few acres of produce in production despite a sizable farm population relative to neighboring states may suggest room for significant growth in produce production (assuming these farms are not significantly limited by land or capital availability), but it also may suggest that significant barriers to expansion and scaling up of produce operations in Kentucky have yet to be identified or overcome. (Brislen et al., 2016, p. 5)

These findings inspired Kentuckiana Food Aggregation Project coordinators to better understand the barriers faced by producers as they try to access larger wholesale markets.

2. Sales

The relatively limited amount of produce cultivated for wholesale and few acres of produce in production in Kentucky have implications for the sales strategies employed by producers. Existing

literature outlines the types of production strategies that exist within Fayette County, Kentucky, the dominant sales channel for fruit and vegetable farmers in the Louisville region, and the number of farmers who are interested in increasing sales through wholesale markets.

Authors of the *Fayette County Local Food Demand Assessment* identified the two types of production strategies used by area producers. They suggest that of the two types of strategies,

[t]he first is represented by producers that focus on smaller-scale diversified production and direct-to-consumer relationships. The second requires larger production volumes of a few specific items for wholesale. While some farmers will engage in both strategies, their production strategies are shaped by where they find viable market demand, returns that cover production costs, and trusting relationships with buyers” (Rossi et al., 2015, p. 6-7)

Other studies echoed the prominence of direct-to-consumer sales among regional farmers and specified the types of direct to consumer sales outlets most commonly used. Authors of *Building the Local Food Economy* suggest that direct marketing is the dominant marketing and sales channel used by producers with farmers’ markets as the most prominently used sales channel (Market Ventures Inc. and Karp Resources, 2008, p. 7). Data from the Community & Economic Development Initiative of Kentucky (CEDIK) also highlighted Community Supported Agriculture (CSA) as a common outlet for direct to consumer sales by producers.

While it is clear from the existing literature that direct sales play a key role in producer sales, researchers have also explored producer use of and interest in wholesale channels as sales outlets (the second strategy noted by the *Fayette County Local Food Demand Assessment*). In *Local Food for Local Farmers Making Local Decisions*, researchers found that “a significant percentage [of producers] indicated an interest in increasing their sales to schools and institutions wholesale channels, and through CSA shares” (KCARD, 2016, p. 60). This interest in increasing sales in wholesale markets was articulated by 47% of their respondents (150 farmers).

3. Plans for Expansion

The data around grower interest in expansion of production is strikingly different based on the type of crops farmers produce. Findings from *First Processed Produce in Central Kentucky* suggest that fruit growers have more interest and optimism related to expansion and thus have specific plans for expanding production while vegetable producers had no clear plans for expansion of produce production for wholesale (Brislen et al., 2016, p. 7).

Offering more insight as to why interest in expansion varied among fruit and vegetable producers, *First Processed Produce in Central Kentucky* authors point out that “there is currently excess demand for apples, especially in relation to school lunch programs” and remind readers of the unique characteristics

of fruit production expansion that “follows a longer-term plan which is less sensitive to single-season market trends” (Brislen et al., 2016, p. 7).

4. Supportive Infrastructure

Prominent trends have emerged with producers in the way of ad hoc infrastructure creation. Given that vegetable producers had no clear plans for expansion of production for wholesale, producers who are interested in growing profitability and scaling up supply but have yet to secure reliable agreements with wholesalers have sought to fill the gaps in supportive infrastructure. This supportive infrastructure ultimately aids production by acting as smaller-scale and unofficial aggregators and wholesale distributors. *First Processed Produce in Central Kentucky* found that producers in the region are currently “bringing together neighboring producers’ smaller harvests together to scale up supply” (Brislen et al., 2016, p. 4). Later in the study, the authors provide insight into possible motivations for producers to create their own aggregation and distribution systems, detailing producers’ “strong preference to act as their own sales agents and avoid what they perceived to be unnecessary markups incurred when selling through existing distribution businesses” (Brislen et al., 2016, p. 13). Perhaps this trend in ad hoc aggregation and distribution can be seen as a response to the significant barriers to expansion faced by regional producers.

V. Barriers to Wholesale Market Participation

The existing literature on the Kentuckiana regional food economy offers a vast array of findings related to obstacles and challenges faced at multiple levels within the region. Challenges specific to aggregation were identified and analyzed for the purpose of this study. Those identified barriers were grouped into the following categories: lack of regional capacity, historical transition from tobacco farming, lack of consistent price premiums, sufficient supply of desired local products at the wholesale level, production challenges, wholesale practices and requirements, perception at the producer, buyer and consumer levels, and a lack of information sharing and communication among different players of the regional food economy. The following sections will detail relevant findings related to barriers that have prevented the effective and sustainable implementation of aggregation strategies.

Lack of Capacity at Regional Level

At a more general level, several studies suggested that the Kentuckiana region as a whole is missing key elements that contribute to a healthy, well-functioning regional food economy. In one of the most salient claims about weaknesses in the overall region, *Grasshoppers Distribution: Lessons Learned and Lasting Legacy* argued that capacity issues at the systems level contributed to the downfall of Grasshoppers Distribution—a food hub in Louisville that opened in 2007 and closed in 2013. The authors note that the major organizational issues leading to the decline of the entity were compounded by “a lack of capacity (technical knowledge and built infrastructure) both within the organization and the

regional food system as a whole” (Brislen et al., 2015, p. 5). The following sections highlight nuances of some of the challenges unique to our region as a whole.

Regional History: Transition from Tobacco

One of the key developments that has contributed to a regional gap is the market-forced transition away from tobacco production among Kentucky’s small farmers. With the loss of the price floor for tobacco, the Kentuckiana region has seen a decrease in the number of operational farms, amount of farmland, and average farm size. To better understand the impact of these changes, it is critical to be familiar with the history and context that shaped the current regional realities. Many of the studies consulted offered strong contextual analysis of the events surrounding Kentucky’s transition from tobacco production, ultimately allowing for a richer understanding of the region as it stands today.

Over the last 10 years, Kentucky’s agricultural production has radically shifted from being run by lucrative small farms leading the nation in tobacco production to struggling small farms attempting to grow vegetables and cash crops on the same land previously used for tobacco. Within the historical context section of *Grasshoppers Distribution*, the authors draw the connection between Kentucky’s previously thriving small farms and the quota program that provided guaranteed income for tobacco producers, saying:

The small-farm legacy of Kentucky is often credited to the tobacco quota program, which allowed small-acreage farmers to produce a crop for a guaranteed buyer at a fair price. A common anecdote in Kentucky was that the tobacco quota paid for the rest of the farm expenses and allowed small farmers to keep farming (Brislen et al., 2015, p. 9).

The tobacco quota program was instrumental in providing much needed assurances of income for small farmers.

The Berry Center study *Local Food for Local Farmers Making Local Decisions* also expertly depicts the regional loss and dramatic transition experienced with the elimination of the tobacco quota system in 2004. Authors detail the guarantees of the quota program and explain that “a price floor for tobacco provided farmers with certainty as the Burley Growers Cooperative would purchase tobacco at a government-determined level if it did not bring higher than that price at auction” (KCARD, 2016, p. 5).

The loss of this system was catalyzed by waning public and private support for the system ultimately leading to political action. When the tobacco quota program was eliminated with the passage of the federal Tobacco Transition Payment Program in 2004, a buyout of the quota occurred with landowners and tobacco farmers receiving portions of the buyout funds (KCARD, 2016, p. 5). These actions have had a far-reaching and lasting impact on our regional food economy.

The system supported by the tobacco quota program allowed for a level of security that no longer exists for small farms. The loss of guaranteed price floors for tobacco led to a dramatic change in production as a once central, staple regional product disappeared from 92% of the Kentucky farms where it was grown (KCARD, 2016, p. 5). With many small farmers then transitioning to vegetable and cash crop production, smaller scale producers have struggled to find footing in a new market that lacks the security once provided by the production and sale of tobacco.

The authors of *Grasshoppers Distribution* describe this reality in the context of the emergence of a regional distribution and aggregation entity, saying “because of the lack of markets and infrastructure [for non-tobacco products], investment in the supply chain was needed” (Brislen et al., 2015, p. 9). With the 2013 closing of such an entity within the Louisville region, it can be argued that the need for investment in the supply chain is still greatly needed as the region continues to find other markets in light of the loss of price premiums for tobacco.

While many studies have highlighted the opportunities for growth embedded in this transition from tobacco, others are quick to point out that this change is especially difficult because the purchasing infrastructure from small farms that was in place for the tobacco distribution and buying system has not been developed in the food system. Farmers are struggling to make the same profits as they were when producing tobacco and commercial buyers, regional wholesale companies, consumers, and these small to medium sized producers have been met with multiple barriers in their attempts to assist in the development, improvement, and expansion of local and regional food business enterprises.

Pricing and Profitability of Local Products

Undoubtedly influenced by regional transitions brought on by the elimination of the tobacco quota program, the lack of consistent pricing for Kentucky farm-sourced products figures prominently as a barrier within the studies reviewed.

One of the key findings related to purchasing of local products is that price is ultimately one of the largest considerations in buying decisions. As such, “producers speculate that issues of price and convenience will always be limiting factors for increasing local food purchasing past a given threshold level” (KCARD, 2016, p. 3). Because producers are expected to compete with larger industrial operations when it comes to wholesaling their products, issues of competitive pricing present challenges to local farmers. These challenges ultimately impact producers’ desires to expand production for wholesale markets (Brislen et al., 2016, p. 3).

In the absence of consistent wholesale demand of local products with premium pricing, many producers have taken matters into their own hands by pursuing direct-to-consumer sales that allow for greater profitability. Studies have found that “farmers who were once set on being wholesale producers have realigned their business to focus on CSA and direct sales because they are more reliable and offer a

premium compared to wholesale” (Brislen et al., 2016, p. 15). Because direct-to-consumer sales channels have proven to be consistent and more profitable, regional farmers today are less encouraged to grow products for wholesaling. Further disincentivizing smaller regional producers’ participation in wholesale avenues is the reality that the “problem of price premium is doubly true for organic produce” in that direct to consumer supporters place a higher value on local, organic products than wholesale buyers (Brislen et al., 2016, p. 15).

Varied benchmarking strategies also confound the problem, as this variation ultimately benefits wholesalers and further prevents consistency of pricing for local products at the producer level. In describing the ways pricing is determined for wholesale buyers, creators of the *First Processed in Central Kentucky* study assert:

Some producers mentioned that they negotiate a price with a distributor with a target price that is derived from previous interactions, terminal prices, and auction prices. Others note that they just take what they can get from the distributor as there are few other market outlets and they have little standing to argue for a higher price, even if they feel their product is of a superior quality. California free on board price (FOB) plus the cost of freight appeared to be a commonly referenced price benchmark for wholesale prices offered to Kentucky producers. (Brislen et al., 2016, p. 13)

Varied strategies for setting pricing at the wholesale level make it difficult for producers to rely on a fixed price for their products. Moreover, “the attitude among producers is that for produce, it is a buyers’ market, and they have little control over what they can receive, regardless of their specific farm practices and produce quality” (Brislen et al., 2016, p. 15).

Additionally, based on the existing literature, it seems that producers rarely factor their production costs for specific crops into their setting of a target price for wholesale production, and “calculation of specific production costs by crop is not a common practice among growers” (Brislen et al., 2016, p. 13).

Due to varying pricing benchmarking strategies as well a lack of steady and reliable demand and premium pricing for local products at the wholesale level, it is clear that issues of pricing remain a challenge for producers interested in entering larger markets.

Production Challenges

The state of Kentucky has the largest number of small farmers and farms in the country and is losing them at a record rate each year. A 2012 Census of Agriculture from the USDA states that Kentucky lost 8,196 farms in just five years, decreasing from 85,260 in 2007 to 77,064 in 2012. Since the transition out of tobacco farming in 2004, small and medium sized producers have been faced with many barriers preventing them from developing profitable models on their farms. While production may have been

the main focus for these producers in the past, modern day small and medium sized producers must also become experts in identifying markets, pricing competitively, promoting their products, labeling, communicating with customers at multiple markets each week, producing a wide variety of high-quality products, purchasing liability insurance, and investing in third party GAP audits for large market access. Many small farmers and producers do not have the capacity to take on these tasks and are forced to cease farm production. Many studies consulted for this literature review provided needed insight into the challenges most pressing to regional producers.

No discussion of production challenges is complete without acknowledging the vast amount of risk farmers are exposed to in scaling production for uncertain markets. Authors of *Local Food for Local Farmers Making Local Decision* articulate this danger well:

Farmers make decisions about production and market outlets, and those decisions do not just affect USDA data and the food options that consumers have. Those decisions affect their ability to earn income from their farm, make their mortgage payments, and pay their family's living expenses. Ultimately, the risk associated with meeting the demands for local food is borne most acutely by the farmer who chooses to produce for that demand (KCARD, 2016, p. 2).

Producers are the most vulnerable of the key players in the regional food economy, as the investments they make in production have direct impacts on their ability to sustain their livelihood and support their families. While data confirming increasing regional demand for local products provides some encouragement for participation in wholesale channels, ultimately the experience of unreliable volume and timing of produce orders serves to dissuade producers from accepting the risk involved in scaling their operations for wholesaling (Brislen et al., 2016, p. 3).

The *Louisville Local Food Demand Analysis* claims that if the issue of risk at the producer level is addressed, the demand for local products is far more likely to be met. Addressing this risk, they argue, must require analysis of actual behavior at various purchasing levels as well as assurances that producers will be compensated for investments in wholesale production:

Farmers will grow to meet Louisville's demand, but they need assurance that the demand is real. Farmers and the businesses who purchase from them noted that among even the best-intentioned people, at times there is a disconnect between how people think of themselves (or their businesses) and what they actually do. In the case of purchasing local food, commercial buyers express interest in volumes that regularly exceed what they actually buy when harvest time comes. Contracts between commercial buyers and the farmers who want to supply them will provide the security farmers need to take the risk of scaling up production for new, unproven markets (Karp Resources, 2012, p. 63).

Ultimately, for regional producers to participate in larger wholesale markets, there must be practices, policies, and procedures in place that eliminate the burden of risk felt most acutely by producers.

In addition to the overwhelming issue of risk, the existing literature suggests that producers face challenges related to time and labor as well as land availability. Several key insights from *Local Food For Local Farmers Making Local Decisions* highlight these challenges. Of those producers surveyed:

- The cost of farmland was identified by 78% of farmers as a factor affecting their ability to increase sales in the region (KCARD, 2016, p. 2)
- Similarly, the most common barrier to increasing production of agricultural products for sale in the region was access to land—selected by 27% of respondents (KCARD, 2016, p. 58)
- Time and labor were also cited as on-farm constraints to expanding production, affecting business development, production expansion capacity, and available marketing opportunities (KCARD, 2016, p. 3)

From the studies reviewed, it is apparent that issues of risk, access to land, and availability of time and labor present major challenges to regional producers. Any effort to increase the amount of local product available must first confront these issues.

Buyer Needs

The most common barrier identified by buyers in the literature reviewed was a lack of sufficient supply of desired items at a competitive rate. The *Fayette County Local Food Demand Assessment* states that local purchasing would be higher at the institutional level if adequate supplies of certain items were available (Rossi et al., 2015, p. 2). Other barriers to increased purchasing of local products included within this study were seasonality and high production cost (Rossi et al., 2015, p. 14).

Quantity comes into play in discussions of adequate supply. In the *Fayette County Local Food Demand Assessment*, institutional respondents shared that in the absence of a sufficient amount of certain products they must look to larger suppliers to fill the gap (2015, p 24). These same institutional respondents also mentioned that production practices catering to CSA models require a large variety of production rather than wholesale volume production of 2 or 3 crops, ultimately making expanded production for wholesaling more of a challenge (Rossi et al., 2015, p. 24).

When it comes to what qualities of product buyers are looking for, the *Louisville Local Food Demand Analysis* offered a helpful list of factors that influence purchasing decisions at the institutional level. While product consistency was the most important characteristic among commercial buyers with 93.1% of respondents in agreement, flavor, taste, availability of delivery or distribution, price, shelf life, sufficient volume, graded product specific variety or breed, and availability from existing vendors all play a part in how a buyer decides what products to buy (Karp Resources, 2012, p. 26).

Wholesale Requirements and Procedures

Throughout various studies several key requirements and procedures at the wholesale level were mentioned as major barriers to increasing the amount of local product available within larger markets; those included GAP requirements, grading standards, liability insurance requirements, centralized purchasing practices and decision-making differences across the system at the individual level.

1. GAP and Other Third-Party Audit Requirements

Two of the studies consulted, cited Good Agricultural Practices (GAP) auditing requirements as a critical obstacle to many farmers interested in selling to larger wholesale buyers. In *First Processed Produce in Central Kentucky*, the authors noted that “some farms report that new food safety requirements—such as third-party GAP audits—have made working with distributors cost- and time-prohibitive” (2016, p. 4). The requirements of the audit add too much cost, time, and paperwork for small and mid-sized producers to complete them (Brislen et al., 2016, p. 3).

Again current producer preference for direct-to-consumer sales remains relevant when discussing GAP certification among small to mid-sized farms. In *First Processed Produce in Central Kentucky*, researchers discovered that “smaller growing operations find that the audit is an added cost that doesn’t make sense for their diversified operation”—their supply of product is often such that small producers can remain profitable through direct sales or through distributors who do not require GAP certification (Brislen et al., 2016, p. 8).

While smaller scale producers may not find value in certain certifications, research shows that “GAP audit requirements are quickly becoming the cost of doing business with larger distributors” (Brislen et al., 2016, p. 8). In 2012, the *Louisville Local Food Demand Analysis* found that 30.7% of the companies they surveyed required that producers be GAP certified—a number that has likely increased over the years (2012, p. 29-30).

Studies suggest that some producers may be better prepared for increased wholesale requirements for GAP certification. While many Kentucky produce farmers have gone through training offered by the Kentucky Department of Agriculture, few produce farmers are officially certified (Brislen et al., 2016, 8). This is not true of all sectors of production. Contributors to *First Processed Produce in Central Kentucky* found that “fruit-growers were more proactive in pursuing third-party auditing and adapting to changing requirements as their largest demand is from institutional buyers whose distributors require the certification” (Brislen et al., 2016, p. 8).

The literature emphasizes the need for further exploration of barriers related to third-party food safety audits and requirements. Cited as a key question for future consideration, *First Processed Produce in Kentucky* authors note the importance of asking “how do we facilitate the expansion of wholesale, GAP

auditable produce production in Kentucky?” (Brislen et al., 2016, p. 18) Questions of removing certification-related barriers to small and mid-sized producers prove to be crucial in efforts to build a more robust local food economy.

2. Grading Standards and Liability Insurance

It is worth noting that grading standards and requirements for supplier-held liability insurance surfaced in the *Louisville Local Food Demand Analysis*. Surveys of commercial buyers suggested that in 2012:

- More than 53% of local food buying companies require graded products compared to the 45.3% average of commercial buyers as a whole (Karp Resources, 2012, p. 30)
- 50.7% of surveyed commercial buyers require their suppliers hold liability insurance with an additional 14.7% of respondents sharing that they did not know if liability insurance was required (Karp Resources, 2012, p. 30)

Grading standards and liability insurance affect small to mid-sized producers’ access to sales through larger wholesale markets.

3. Centralized Purchasing Practices

Centralized purchasing—or the control of one department over all purchasing that is undertaken by a business—as well as preferential treatment for distributors can have negative effects for small to mid-sized producers interested in making local products available through sales to larger institutions.

The *Louisville Local Food Demand Analysis* demonstrates the restrictions enacted by centralized purchasing claiming that such practices “limit an individual location’s autonomy in selecting suppliers or products. A company may require that individual locations select items to purchase exclusively from vendors who have gone through a pre-approval process” (Karp Resources, 2012, p. 29).

Institutional buying practices of only working through specific vendors—more specifically, pre-approved distribution companies—can adversely affect producers who are currently working to gain viable access to larger wholesale channels. Smaller distributors (the ad hoc producer distributors and aggregators previously discussed in earlier sections) are unable to supply major buyers because products must go through preferred distributors or food service providers. The extra step of sales from the small farm-created ad hoc distribution system to preferred distributors and then to institutional buyers raises prices beyond institutionally acceptable prices (Brislen et al., 2016, p. 4).

Authors of *First Processed Produce in Central Kentucky* go on to say that “supply chains are constantly dominated by preferential contracts with specific distributors” and that decision-makers at the

distributor and institutional levels “must find ways to break through these preferential relations” (Brislen et al., 2016, p. 17)

4. Individual Variations on Local Product Purchasing

Also of note when discussing wholesale practices that have an impact on smaller scale farmers is the systemic dependence on individuals at the institutional level holding key decision-making roles and driving the purchase of local products in wholesale markets. *First Processed Produce in Central Kentucky* argues that much of wholesale demand—especially at the institutional level—relies upon “individual staff members with a strongly held commitment to sourcing Kentucky produce holding key procurement positions” (Brislen et al., 2016, p. 9). The lack of institutionalized policies and procedures for purchasing of local products leaves the regional wholesale system vulnerable to changes in overall institutional demand as companies experience staff turnover.

Regional Infrastructure Needs

Multiple studies emphasized the need for systems and infrastructure to be strengthened and added to the Kentuckiana food economy. While several studies proposed recommendations with regard to adding and strengthening existing infrastructure that will be discussed in the next section, three studies cited a lack of distribution services and limited cold-chain storage and transport capacity as barriers to wholesaling.

The *Louisville Local Food Demand Analysis* offers two key findings related to infrastructure capacity issues in the way of distribution. Authors first claimed that two of the 4 issues leading 44% of commercial buyers surveyed to stop buying local foods were “issues with product packaging” and “lack of distribution services” (Karp Resources, 2012, p. 5). Similarly, the data show that a lack of distribution services was a “key obstacle keeping those [commercial buyers] who have never purchased local foods from doing so” (Karp Resources, 2012, p. 5). Other studies suggest that further research should be done to explore specific distribution issues, practices and capacity (Rossi et al., 2015, p. 43).

In addition to calls for better understanding and strengthening of our regional distribution system, researchers also detail barriers presented by an overall lack of processing entities. *First Processed Produce in Central Kentucky* asserts that:

Wholesale produce production in Kentucky is currently limited... More durable and familiar items are easily incorporated into institutional buying. Growers note that less durable items, such as peaches and tomatoes, are more difficult to sell in bulk, and for these some form of processing would allow them to increase production (Brislen et al., 2016, p. 4).

If the regional food system were to provide greater cold-chain storage, transport capacity, and processing services, growers would be able to extend the shelf-life of their products and perhaps increase their sales within larger markets.

In terms of other supportive services that could increase local product availability, respondents from the *Fayette County Local Food Demand Assessment* suggested that “maps that would identify existing distribution, processing, and production facilities would also be helpful for distributors, farmers and buyers,” possibly helping to “identify gaps and underutilized opportunities” (Rossi et al., 2015, p. 4)

Consumer, Buyer, and Producer Perception

Perception plays a large role in the success of any regional food economy. While perception may not necessarily be a barrier to wholesale market participation, it is however reflective of other barriers and must be taken into consideration in any strategy aiming to increase participation. Fortunately, many existing studies have outlined perceptions held by key players within the Kentuckiana region. These perceptions were captured at the consumer, buyer, and producer level.

1. Consumer Perceptions

Two widely-held consumer beliefs about local food were discussed in the existing literature surrounding the Louisville and Owensboro regional food economy. The first belief—outlined in *Analyzing Healthy, Local Food Systems: A Case Study of Owensboro, Kentucky*—suggests that local food is an elite, unaffordable option. Study author Callie Hayden writes that “because local items generally are priced higher than regular products, some people believe that only the upper class can afford such products” (Hayden, 2013, p. 52). Similar findings from the *Louisville Local Food Demand Analysis* affirm this thought, stating “most respondents associated local foods with higher prices” (Karp Resources, 2012, p. 41).

The second claim shared among many consumers was that local food is more flavorful and superior or equal in quality to other products. The *Louisville Local Food Demand Analysis* found that “there were generally positive perceptions of local food across the entire universe of consumer respondents” (Karp Resources, 2012, p. 41). Because consumers largely believe the taste and quality of local food to be superior to other products, the *Louisville Local Food Demand Analysis* also found that consumer respondents across all income bands “are willing to increase their monthly spending on local foods” at a rate of over twice the average of their current levels of spending (Karp Resources, 2012, p. 43).

2. Buyer Perceptions

First Processed Produce in Central Kentucky offers significant findings in the way of perceptions at the institutional level—namely among institutional dining service providers. Of most importance was the

discovery that “there is a mismatched perception by institutional dining service providers of a lack of consumer demand and existing support for local purchasing from Kentucky residents (Brislen et al., 2016, p. 9). Citing existing contractual or legislative mandates to purchase and serve Kentucky farm-sourced ingredients, the authors note that perceived demand for local products at the consumer level is out of alignment with concrete support for local purchasing—a reality that has implications for local food demand at the institutional level.

3. Producer Perceptions

Several key findings about producer perception of the market and demand for local food emerged from the existing literature. As previously discussed, perception of demand influences all parts of the local food economy, but authors of *First Processed Produce in Central Kentucky* remind readers that “the growth of wholesale production is closely linked to producers’ perceptions of the reliability of the market for Kentucky farm-sourced ‘local’ product” (Brislen et al., 2016, p. 7). Expansion of regional efforts to increase the amount of local products available for wholesaling thus is heavily impacted by perception at the producer level.

The literature suggests several interesting insights about the way producers think about the demand for local product within the region:

- Producers largely view the demand for Kentucky farm-sourced products as unreliable and are hesitant to invest heavily in wholesaling as a sales strategy (Brislen et al., 2016, p. 7).
- 67% of producers surveyed in the 2016 Berry Center study agree that there exists a high level of unmet demand for local food, but believe that buyers and consumers make purchasing decisions based on price alone and are unsure of the strength of the demand for local products (KCARD, 2016, p. 2).
- While wholesale production as a sales strategy is largely viewed irresolutely, several orchards were enthusiastic about wholesale and processing potential. They see a growing market for fruit—especially among school districts—and are able to move large amounts of their supply rather quickly (Brislen et al., 2016, p. 3).
- Noting the potential for growth should they experience success at the wholesale level, some farm enterprises that focus primarily on direct-to consumer sales have experimented with growing a few items for sale to grocery stores or institutions as a part of a general enterprise diversification strategy (Brislen et al., 2016, p. 3).
- According to those surveyed in the Berry Center study, the majority of producers want to increase their sales in the region. As a way to ensure profit at the wholesale level, producers were interested in agreements with buyers that could help them have greater certainty with regard to production (KCARD, 2016, p. 2).

Given the substantial impact that producer perception about demand for local products has on the region as a whole, it is essential to incorporate producer perception into any strategies aiming to strengthen the vitality of the local food economy.

Communication among Regional Players

The lack of effective communications at various levels of the food system was commonly cited as a barrier to increased participation in wholesale markets. As with perception, the existing literature analyzed communication between producers, buyers and consumers.

1. Producers and Buyers

Strong communication is critical to the health of any food economy. Several of the studies reviewed cited a lack of effective and frequent communication between producers and buyers as a critical issue preventing greater participation in the wholesaling of local products. First Processed Produce in Kentucky listed “poor communication from buyers of changes in orders” as one of four key disincentives to expanding production to sell through wholesale distributors (Brislen et al., 2016, p. 3). Similarly, one of the foundational claims of the *Louisville Local Food Demand Analysis* suggested that “[m]eeting demand depends on increased trust and strong communication between buyers and producers” (Karp Resources, 2012, p. 3). Without trust and strong communication channels between producers and buyers, each of the key players will continue to act without full knowledge of the needs, intentions, and capacities of the other.

The *Louisville Local Food Demand Analysis* further advocates for better communication between producers and buyers, saying:

Growing local food’s status in Louisville from a specialized to “normalized” part of the food supply will require strong communication and relationships. Commercial buyers will need to be clear with suppliers about the products and volumes they need and the prices they can pay. Producers will need to engage actively with potential new buyers and the service industries (brokers, distributors) that can help them reach those new buyers (promoting what they have, for example). And consumers must be clear with the owners of food businesses they depend on about the kinds of foods they want and where they want those foods to come from (Karp Resources, 2012, p. 62).

Effective communication between buyers and producers—especially when it comes to product and volumes desired by buyers, pricing, possible sales opportunities, and marketing—will allow for a more cohesive and higher-functioning regional food system.

2. Buyers with Consumers

In terms of communication that buyers have with consumers, several studies suggested that buyers need to better label locally-farmed products as well as clearly communicate the impact of buying locally to their customers.

To meet the demand requirements present in the region, the *Louisville Local Food Demand Analysis* asserts that “commercial buyers will need... marketing assistance to promote the foods themselves and the impacts their companies are making by sourcing locally” (Karp Resources, 2012, p. 62). Better communicating the impact of local purchasing continues to drive the desire and demand for local products.

Another barrier to greater wholesale participation is the way Kentucky farm-sourced produce is labelled in existing local food marketing programs—namely Kentucky Proud. *First Processed Produce in Central Kentucky* demonstrates the way the current labeling process does not always benefit local producers:

Labeling and marketing of farm origin appears to be an essential requirement to expanding fresh or processed Kentucky farm-sourced produce. Existing local food marketing programs (i.e. Kentucky Proud) do not differentiate or distinguish products that use Kentucky farm-sourced ingredients. (Brislen et al., 2016, p. 17)

The current labelling system—where a product can be considered “Kentucky Proud” but lack farm-sourced “local” ingredients (a term that varies widely)—ultimately affects institutional purchasing and consumption. End-buyers rely on distributors and food service providers who do not incorporate the category of “local” in their inventories because unreliable data from Kentucky-owned businesses and cataloguing practices within internal inventory systems do not designate farm of origin or whether a product has Kentucky farm-sourced ingredients (Brislen et al., 2016, p. 10). Because products are not distinguished by location of origin in the current labelling system, even buyers with an explicit interest in purchasing regionally produced products are unable to track their specific uses of Kentucky-grown products and may not be meeting any standards they have set for themselves.

Summarizing the importance of labelling, Callie Hayden author of *Analyzing Healthy, Local Food Systems: A Case Study of Owensboro, Kentucky* writes “[i]t seems that once people realize the benefits of supporting local producers, most are inclined to purchase local products. However, without some way to identify these items, they will continue to be overlooked” (Hayden, 2013, p. 85). To increase the demand and purchasing of local products, distributors, retailers, and consumers must know what they are buying and the impact local purchasing has on a region.

VI. Relevant Recommendations

While many barriers to wholesale market participation were identified, researchers have also made many recommendations with regard to strengthening the local food economy in the studies published over the last 10 years. The following recommendations are those most related to the project coordinators' interests and project scope for identifying the feasibility of an aggregation entity.

Supply Support and Associated Infrastructure

Tied directly to previous discussions of price premiums and security for producers interested in wholesale expansion, much of the literature (*Fayette County Local Food Demand Assessment*, *Louisville Local Food Demand Analysis*, and *Analyzing Healthy, Local Food Systems: A Case Study of Owensboro, Kentucky*) recommend supporting supply side capacity and associated infrastructures as well as financial investment at the producer level.

Local Food for Local Farmers Making Local Decisions quotes Wendell Berry in his recommendation for stronger regional production following the loss of security in the transition from tobacco production, saying producers need "several crops producing comparable income on comparable acreage grown with family and neighbor labor within a dependable market" (KCARD, 2016, p. 7). Citing specific types of support needed on the supply side, the *Louisville Local Food Demand Analysis* claims that producers most need "increased ease of access to market, including aggregation, distribution, sales, marketing, and crop planning infrastructure and services" (Karp Resources, 2012, p. 5). Overall, the literature suggests that any entities or processes that are able to ensure market dependability, pricing comparable to that which was offered previously in the region, and the capacity to produce the demanded products within the land available will ultimately aid in a stronger food economy and lay a foundation for sustainable wholesale expansion.

With supply-side supports in place, greater amounts of locally grown products will be available for wholesale purchasing. *The Louisville Local Food Demand Analysis* makes the case that new physical infrastructure would be needed to accommodate for an increase in regionally available products. More infrastructure will be needed, they argue, "to handle these increased volumes of local food, in the forms of aggregation, processing or distribution infrastructure" (Karp Resources, 2012, p. 62). Once this infrastructure is in place, they also recommend increasing "technical assistance and marketing capacity" (Karp Resources, 2012, p. 62). The literature reviewed ultimately argues that to most effectively create an environment favorable to greater wholesale participation, supply-side support must be plentiful, and physical infrastructure growth should complement that of expanded production.

Aggregation Opportunities and Strategies

Several strategies specific to aggregation were outlined in two of the studies consulted: *Building the Local Food Economy* and *First Processed Produce in Central Kentucky*.

The first strategy comes from *Building the Local Food Economy*. 13 scenarios were proposed to increase farm income by selling to Louisville buyers based on feedback from focus groups of producers. The strategy that most aligned with increasing aggregation in the region is the addition of aggregation points for local foods distribution. This strategy ranked 5th in importance among farmers and assumed the creation of “five aggregation points...strategically located in the region [that] could supply three trucks a week with 10 pallets per truck for 20 weeks” (Market Ventures, Inc. and Karp Resources, 2008, p. 80). These proposed facilities would then facilitate the movement of 3,000 pallets of local food each year.

Study authors calculated the implementation costs for the first 3 years of the cold-storage aggregation points, sales potential for Kentucky farmers, and an investment return ratio. Start-up costs include planning/engineering, facility modification, equipment, and staff time. An initial estimate of capital costs, based on the assumption that the aggregation facilities could be located on donated property such as a county extension office and that the facility has adequate power to run the equipment, is about \$90,000 per site (Market Ventures, Inc. and Karp Resources, 2008, p. 81). The authors also concluded that this strategy would require and yield:

- 3 year investment estimate: \$795,000
- 3 year return estimate to Kentucky farmers: \$3.3 million
- Investment return ratio: 4.2
- Community benefits: strengthens food distributors in Louisville
- Challenges: gaining collaboration from Cooperative Extension offices, ability of farmers to increase production, liability issues (Market Ventures, Inc. and Karp Resources, 2008, p. 101)

The calculations and rationale behind the addition of 5 regional aggregation points provide a helpful blueprint for future aggregation strategies.

The second study to offer recommendations specifically related to aggregation was *First Processed Produce in Central Kentucky*. Authors suggest that while larger producers may be able to expand to enter wholesale markets without much difficulty “strategies or institutions that aggregate items from small/medium farmers may potentially be cost-competitive” so long as coordination and trust exists between producers and the scope of operation is clear (Brislen et al., 2016, p. 11). Their recommended approach to aggregation is to rely on a distribution enterprise that initially develops wholesale production through alternative smaller wholesale markets and gradually increases its larger institutional supply (Brislen et al., 2016, p. 16).

Both strategies leverage existing distribution channels and offer support to producers. They also seek to strengthen existing infrastructure by either relying on the use of Cooperative Extension property or the well-established smaller wholesale markets (restaurants, groceries, and buying clubs). The proposed strategies offer a helpful framework in crafting future approaches to regional aggregation.

Lessons Learned from Previous Aggregation Efforts

One of the most relevant pieces written about aggregation and distribution in the Louisville regional food system is *Grasshoppers Distribution: Lessons Learned and Lasting Legacy*. In this deep-dive into the rise and fall of one of the most influential aggregation and distribution entities in Louisville's recent history, the authors masterfully outline key moments in the life of Grasshoppers Distribution Company and offer recommendations and lessons learned based on the events that led to its closing.

The best practices outlined serve as a helpful guide to any parties interested in aggregation in the Louisville region. At a high level, the authors organized their recommendations around the following items:

- Best practices related to infrastructure and standards and policies
- The requirement for consistent quality, service, and pricing and getting producers to meet these standards
- The need for effective method of moving product from farm to aggregator
- Recommendations to employee expertise in creating a business model
- The importance of establishing clear metrics with defined targets and timelines for growth
- Emphasis on ensuring costs are in sync with market trends
- The issue of irregular timing of invoice payments
- How critical it is to understand the minimum financial, human, and material resources needed and not to open until needs are met
- Employing an expert in wholesale produce distribution

Several of the recommendations are especially pertinent to the work of the Kentuckiana Food Aggregation Project. The key areas of most interest to the project team seeking to understand the feasibility of an aggregation entity in the Louisville region were 1) planning, 2) focus on core service provision, 3) staffing, and 4) metrics to measure success.

1. Planning

The authors of the Grasshoppers study emphasize the importance of planning in the creation of a successful aggregation and distribution business. They write and caution that “successful enterprises are

built on sound, research-based plans that guide strategic development and are driven by the passion and vision of leaders. However, it is too often the case that passion comes first, and the details are presumed to take care of themselves” (Brislen et al., 2015, p. 20). While excitement is critical, well-crafted, data driven plans are a requirement for business success.

The researchers’ recommendations related to planning is then to “think carefully and critically about what financial, human, and material resources are needed at a minimum to set the enterprise up for success and have the patience to wait until they are in place before opening the doors” (Brislen et al., 2015, p. 20). This recommendation—emphasizing careful and extensive planning—must be taken into consideration in the establishment of any distribution or aggregation entity in the region.

2. Focus on Core Services

Once a food system-supportive business has been established, the authors of the Grasshoppers study suggest that maintaining a focus on core activities and competencies of the business is critical to success, efficiency, and viability.

Within the context of Grasshoppers’ history, the researchers found that while Grasshoppers offered a variety of services to help developing farm enterprises, “Grasshoppers’ activities as a food aggregator and distributor were, in the end, the greatest help to farmers” (Brislen et al., 2015, p. 21). They go on to say that—to its own detriment—Grasshoppers strayed from its original mission, arguing that “the extra educational and other development activities taken on by Grasshoppers staff, while of huge benefit to the producers, resulted in a dilution of efforts and resources and a confusion of mission” (Brislen et al., 2015, p. 21).

In outlining the lessons learned from Grasshoppers’ practices, study authors suggest that:

Food hub leadership should identify a parsimonious set of core services that address the highest needs within the particular context of that region’s existing agro-food system. Recognizing the core competencies of the food hub allows management to focus efforts on innovation and efficacies while having the confidence that success as an enterprise, in and of itself, is the realization of the food hub’s mission” (Brislen et al., 2015, p. 7)

As with any business, well-run food system businesses must focus on their main mission and most valuable services. In situations where additional development activities are required, authors recommend creating separate business lines and managing those accordingly. Additional activities must be subsidized and financially accounted for in a way that does not dilute the most valuable offerings to its customers.

3. Staffing: Expertise and Effective Management

In order for an aggregation entity to offer the most valuable services, staffing of key roles must be considered. One of the key findings of the Grasshoppers analysis is that “investing in expert management staff is paramount and should be considered a key investment for the long-term success of the business” (Brislen et al., 2015, p. 20). The authors also emphasize the need for an expert in wholesale produce distribution, arguing that either an expert manager or consultant must be hired to establish the necessary protocols because this type of expertise “provides needed foundation of the enterprise to ensure a baseline of efficiency” (Brislen et al., 2015, p. 20). Employment of efficient, effective and expert staff proves to be an element of business excellence.

4. Metrics

Finally, in line with the study researchers’ emphasis on planning, metrics and data-driven action become critical to the success of any aggregation entity. They write, “having clear direction as to the highest and best use of scarce resources is key. To this end we strongly recommend that all enterprises establish clear metrics coupled with defined targets and timelines for conservative growth” (Brislen et al., 2015, p. 21). As any entity grows and changes, systems to measure performance and indicators of organizational health must guide future planning and daily operations.

Additional Support Offerings to Consider

Along with recommendations specific to aggregation, many studies consulted highlighted gaps in the Louisville and Lexington regional food system that could be filled by businesses that provide support the overall system. While not the main focus of an aggregation entity, the following items were noted as benefits needed for small to mid-sized producers interested in access larger markets: relationship building among producers, buyers, distributors, storytelling, education (technical, business, marketing, and consumer), and assurances that demand for local food is real.

1. Relationship Building

Likely one of the most frequently mentioned needs, relationship building at all levels of a regional food system is essential. *The Fayette County Local Food Demand Assessment* best advocates for greater relationship building throughout the region. The researchers’ first recommendation in meeting consumer demand is to encourage efforts that strengthen and facilitate relationships between area purchasers, distributors, and producers (Rossi et al., 2015, p. 2). The authors specify needs of regional players and argue that:

In order to grow a vibrant market for local produce and protein in the Bluegrass, there is a need for greater understanding and transparency between producers and buyers on expectations in

quality, price, quantity, and product presentation. While all players in the value chain have the best intentions, there is a lot of learning to do on all sides so that mutually beneficial relationships can be built and maintained. (Rossi et al., 2015, p. 9)

Their recommendations for increased relationship building throughout the regional food system also have implications for future research. Study authors argue that research that identifies systemic gaps and “formulates diverse strategies to facilitate stronger relationships between producers, buyers, and distributors” is much needed (Rossi et al., 2015, p. 11). Both in practice and study, coordinated actions to explore and fill gaps in relationships among key players in the regional food system are currently missing.

2. Storytelling

Two of the studies referenced—the *Louisville Local Food Demand Analysis* and *Analyzing Healthy, Local Food Systems: A Case Study of Owensboro, Kentucky*—had a lot to say about the need for greater promotion and awareness building through storytelling among all parts of the food system.

The Owensboro study argued at several points for the equitable promotion of local farms, producers, and businesses saying that “as more people understand the health, economic, and environmental impacts that promoting local foods yields, the more successful [the local food] movement will become” (Hayden, 2013, p. 84). Similarly, the *Louisville Local Food Demand Analysis* claims that “tracking and tracing incremental growth and the stories behind the food is essential to maintaining momentum and making the case for growth” (Karp Resources, 2012, p. 3). The existing literature thus suggests that storytelling can drive continued growth of the regional food economy and strengthen demand for local products at the wholesale level.

3. Education

Efforts to increase technical, business, marketing, and consumer education were also recommended. Authors of the *Louisville Local Food Demand Analysis* highlight the need for education within the region “to ensure that producers, commercial buyers, and consumers make best use of available supply” (Karp Resources, 2012, p. 3). *Grasshoppers Distribution: Lessons Learned and Lasting Legacy* similarly asserts that technical assistance is needed for producers to increase production and ensure quality (Brislen et al., 2015, p. 21). More education, researchers argue, would lead to an increased supply of local products available and quality that will match end-buyer and consumer expectations.

4. Producer Security and Perception

As previously explored, based on barriers faced most severely by producers, several studies argued that any efforts to increase wholesale market participation must stem from supply-side support and

assurances that demand for local products is not only real, but will translate into secure profits at the producer level. The *Fayette County Local Food Demand Assessment* skillfully goes on to outline the difficult positions of all key regional players, demonstrating the need for risk mitigation at a variety of levels:

Producers simultaneously navigate uncertainty and risk on many fronts of their enterprise; new or greatly expanded production systems, weather events, pests and predators, market fluctuations, and labor shortages. On the other side, purchasers are concerned with finding stable sources of products that meet their internal specifications as well as their end users' expectations all within the context of a highly competitive marketplace and a warehouse full of perishable produce. Buyers expect farmers to be savvy marketers willing to conform to their company's particular standards, while producers seek to work with buyers who understand the unique value and vulnerabilities of local, seasonal food production. Translating between these distinct worlds is a complex challenge for both sides. (Rossi et al., 2015, p. 10)

Because of the high-stakes demands and requirements placed on stakeholders within the local food economy, entities that can offer concrete security at transactional moments will meet existing needs that currently stand in the way of greater regional wholesale market participation.

VII. Conclusion

While the reviewed studies extensively document regional context, barriers to wholesale market participation, and recommendations for further growth, the region's current food system has failed to adequately provide an accessible and viable wholesale market for small scale producers to sell their products and for local institutions to purchase substantial quantities of locally produced food from farms and wholesale distributors.

With insights generated through studies on the Kentuckiana food economy in the last 10 years, the Kentuckiana Food Aggregation Project moved forward with a feasibility study informed by experts on the regional food economy. Data and knowledge gleaned from the existing literature informed the project study area, survey and interview questions asked of buyers and producers, and contributed a wealth of insight as to what type of aggregation entity is needed in the region and what business models could create the most direct farm impact to the producers, buyers, and consumers in the Kentuckiana region. Without the work of compiling existing research on regional barriers to aggregation, production outlooks, insights on demand for local products, and data-driven recommendations for action, the unique findings of the Kentuckiana Food Aggregation Project—in its engagement with buyers and producers—may have failed to both build on the known realities of the region and to contribute to efforts in creating a more sustainable, just, and equitable regional food system that values producers.

In sharing the relevant research that helped frame the scope of the Kentuckiana Food Aggregation Project, the project managers and authors of this literature review hope to inspire other efforts that will respond to the known needs, challenges, and opportunities within the Kentuckiana local food economy.

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Appendix A: Literature Review Matrix Template

<i>Title</i>	<i>Author and Date</i>	<i>Key Factors, Concepts, or Variables</i>	<i>Research Question(s)/ Hypotheses</i>	<i>Methodology</i>	<i>Region</i>	<i>Analysis & Results</i>	<i>Current Production Levels</i>	<i>Production Trends</i>	<i># of Farm and Ranch Operations That Reported an Intention to Wholesale Local Foods</i>	<i>Stated Interest in Aggregation Facility</i>	<i>Marketing channels for food in the region</i>	<i>Market locations and requirements</i>	<i>Outlook for production</i>	<i>Current Storage Practices</i>	<i>Institutional demand</i>	<i>Customer Expectations</i>	<i>Existing Regional Outlets for Local Food and Attributes</i>	<i>Conclusions</i>	<i>Implications for Future research</i>	<i>Implications for Practice</i>	<i>Gaps in Research</i>	<i>Reflections</i>	

Appendix B: Reflections on Regional Studies

Kentuckiana Food Aggregation Project

Reflections on Regional Studies

Developed November 2016, Shared at June 2017 Stakeholder Gathering

Grasshoppers Study, 2015

This lessons learned document by researchers at the University of Kentucky with other contributors including KCARD staff, examined the questions of what happened during the operation of Grasshoppers, a privately owned aggregation and distribution company established in 2006 that closed its doors and ended its purchasing of regional product in 2013. Through focus groups, interviews, and analysis of financial statements, the study's authors determined that changes in the business model and top management, combined with serial income shortfalls preventing the entity from both covering expenses and going after new opportunities, were some of the reasons for the ultimate failure of the business. Notably, however, the business did provide marketing options for 70 regional producers, many of whom continued to market in the region using technical and marketing knowledge gained from their experiences at Grasshoppers.

Relevant Takeaways:

1. All capital needed to build appropriate infrastructure and provide necessary management of the business should be secured before opening the doors
2. Constant assessment of the produce market and the business operations are necessary to assure solvency of the business.
3. The farmers identified Grasshoppers greatest service as being a reliable and high-volume buyer
4. Clear, achievable standard specs are necessary to establish at the beginning to insure consistency and quality of product.
5. Grants can help a food hub-type business, but rarely solve underlying profitability challenges with the business.
6. Experienced personnel are critical to succeeding in the business.

Questions for Further Review:

1. How can we attract regional funders to support this effort after they lost money in Grasshoppers?
2. How necessary is any sort of processing in order to increase amount of product getting into institutions?
3. How do you enshrine producer-friendly values (such as timely payment of invoices and fair pricing) without endangering the financial stability of the company?

2015 National Food Hub Survey

In this study, authors collected biennial information about food hub finances, structure, operations, markets, customers, suppliers, challenges, food safety, and business networks. An invitation to participate along with the link to the web-administered survey was sent to 547 key U.S. food hub personnel. 33% of those invited responded to the survey with 151 completed and partial surveys used in analysis. Survey results were compared to the 2013 study and trends were identified between years and between models.

From this study, there appears to be a trend wherein the longer a hub has been in operation the lower its OER (the more profitable it is). It is reasonable to suggest that the market for food hubs is growing and not saturated based on the findings of this study. Contributors also found that food hubs might expect to break even when revenue is at least \$600,000.

Relevant Takeaways:

1. Food Hubs in business for longer than 2 years had more growth in income and employees than those in business for 2 years or less.
2. 45% are not dependent at all on grant funding, 40% are somewhat dependent, and 15% are highly dependent
3. 75% broke even or better and 66% of these covered at least 99% of operating expenses with product sales-generated revenue
4. Sales of Fresh produce and herbs are 0.58 on the dollar, then meat, poultry, and fish, then milk and dairy, then other processed, then eggs, then processed produce, then grains/beans/flours, and then other
5. Hubs might expect to break even when revenue is at least \$600,000

Questions for Further Review:

1. What is the break-even point for a business in the Kentuckiana region?
2. What should the producer/product ratio be in order to fulfill the need for product categories? Is there enough current supply to fulfill that need?

Local Food Profiles for 23 Central KY Counties

The Community and Economic Development Initiative of Kentucky (CEDIK) emerged as a college level unit within the University of Kentucky's College of Agriculture, Food and Environment (CAFE) in 2010. CAFE administration recognized the need for both an internal source of professional development and instruction for students and county extension agents, as well as an external reach to Kentucky communities with programming and research that focused on community and economic development. Serving one of its main goals of providing research and information that supports community and economic development, CEDIK offers county-level data for 23 Kentucky counties around farm economics and marketing, farm operations and workforce, and food access and food security.

Relevant Takeaways:

1. The number of CSAs reduced by 20% from 2007 to 2012
2. The number of operations with value-added product increased by 21% from 2007-2012
3. The percent of total veggie production acres harvested decreased by 8.8% from 2007 to 2012
4. The number of total farms with sales decreased by 7% from 2007 to 2012

Questions for Further Review:

1. What are the types of value-added products from farms in Kentucky and are they in demand from the wholesale market?
2. What is the market now for farms that were previously running CSAs?

The State of Food: A Snapshot of Food Access in Louisville, 2009

This literature review of key findings from four reports created in 2007 and 2008 aimed to identify gaps in research and inform future initiatives and results. The four reports were:

- "Bridging the Divide: Growing Self-Sufficiency in Our Food Supply" (CFA, 2007)
- "Louisville Retail Market Study" (Strategy 5/LMG, 2007)
- "Building Louisville's Local Food Economy: Strategies for Increasing Kentucky Farm Income Through Expanded Food Sales in Louisville" (Market Ventures/LMG, 2008)
- "Food Imbalanced" (Mari Gallagher Research & Consulting Group, 2007)

By compiling existing research, this report acted as a resource of information regarding the Louisville food economy and food retail & food deserts, farmers' markets, the emergency food system, local food initiatives, and food policy efforts.

Relevant takeaways:

1. Institutional players within the emergency food system should be consulted for this study. In 2009, Dare to Care distributed over 13 million pounds of food and groceries to an estimated 192,000 Jefferson County residents. Additionally, with the closing of Kentucky Harvest, the Louisville region has seen the loss of a part of the emergency food system that distributed 2.7 million pounds of food annually.
2. West Louisville remains underserved in terms of food and retail options. This study stated that "West Louisville has a grocery store to residents ratio of 1:25,000 compared to Jefferson County ratio of 1 store per every 12,500 residents."

Questions for further review:

1. Many of the initiatives and organizations listed in this study are no longer in operation. Who are the current major players of the Louisville regional food system?
2. What is the current make up and impact of our emergency food system?

3. The study shared that Dare to Care made a pledge in 2009 to increase the amount of local food distributed to clients. How much local food is purchased by players within the emergency food system?
4. What happened to the buy local policy proposed to Louisville Metro Government? What are the public commitments from large players in terms of local food purchasing? How much is this pledged institutional demand?

Analyzing Healthy, Local Food Systems: A Case Study of Owensboro, Kentucky, 2013

This study reviews the existing literature on local food system models in an effort to gain greater clarity of what the “ingredients” of a healthy local food system are. A case study was used to explore Owensboro, Kentucky, a city located in Daviess County in the western part of the state. The central aim of the study is to identify the ingredients of a healthy, local food system and reflect on what elements could be a part of the Owensboro context.

The author led interviews with state actors, key players in the Owensboro food system, producers, and non-producers, created a literature review, and conducted a content analysis of USA Today and the Owensboro Messenger-Inquirer. This study offers detailed and relevant insights on the make-up of the local food system in Owensboro.

Relevant takeaways:

1. Cost was a prohibitive factor in consumer choices with regard to local food while values and heritage are positive influences for local purchasing.
2. According to this study, the Cooperative Extension, Health Department, and UK are the main sources for knowledge building and technical assistance in Owensboro.
3. IGA is the largest retailer in the area with Kroger and Walmart as competitors.
4. Chart on p. 79 of structural elements of Owensboro regional food system
5. Descriptions of key players in the Owensboro local food community (p. 39 and p. 60-61)

Questions for further review:

1. What is the history of the unsuccessful cooperative in Owensboro cited on pages 62 and 82?
2. While this study outlines the gatekeepers and influencers in Owensboro with regard to local food, what amount of local food is currently available and purchased?
3. What are the barriers faced by producers, distributors, and institutional buyers in selling and purchasing local food? (Barriers cited were anecdotal and not representative of a large portion of the community due to small number of interviews)

Fayette County Local Food Demand Assessment, 2015

In 2015, the University of Kentucky Food Connections sponsored a study by UK researchers to examine the current landscape of local food demand in the Lexington area in different marketing channels. Over 40 Kentucky Proud entities were interviewed or surveyed.

The study outlines two main strategies that are being employed by producers entering the local food system: 1) Focus on small-scale diversified production and direct-to-consumer relationships and 2) Produce larger volumes of a few items for wholesale. The decision to follow one strategy over another (or the mix if the producer is involved in both) is shaped by where the producer finds viable market demand, a return over their costs of production, and the level of trust found in the relationship between the producer and the buyer.

The authors also stated that growth in purchasing of local food in the area is expected to increase from a current level of \$14.2 million to between \$20-\$24 million in 2020. Respondents indicated that growth would be higher if adequate supplies of certain items were available at a competitive price. This appears to be especially true in higher value items, such as dairy and meats. Purchases of local food are also challenged by incentives and policies in place among larger institutions to channel purchases toward dedicated suppliers.

Relevant Takeaways for High South:

1. Strict policies of institutional buyers create challenges for local food purchasing.
2. To meet the demands from some buyers, entities with small-scale distribution networks have developed. These networks may offer models for consideration or absorption into a larger effort, but they may also pose competitive challenges for any larger effort.
3. While buyers are interested in increasing their purchasing of local food, they are price-sensitive.

Questions for Further Review:

1. What is the nature of the small-scale distribution efforts and how do they integrate into plans for a larger, possibly regional, effort?
2. What is the relative direct farm impact for each of the channels examined and how is that shaping producer interest?
3. How does an aggregator/distribution partner help ensure consistency of product?

Local Food from Local Farms Making Local Decisions: What Do Area Farmers Think About the Market? Study by the Berry Center, 2016

Louisville Metro Government and The Berry Center came together in 2014 to learn what farmers in the Louisville regional food economy think about the market and what farmers need in order to produce for this market. With the 2012 findings that there is an unmet regional demand for local food in the amount of \$158M, questions of production and supply-side experiences

remained unknown. KCARD surveyed 319 producers, interviewed 22 area cooperative agents, and conducted two focus groups with the Berry Center.

Relevant Takeaways for High South:

1. When asked what would help them access local markets, farmers requested increased infrastructure and marketing services and 75% said access to information on potential buyers.
2. Producers agree that there is a high excess demand for their products, but are skeptical that the barriers to increasing production and accessing larger markets can be reliably removed
3. 47% of producers surveyed want to increase sales to wholesale markets

Questions for Further Review:

1. How can this service/entity address the barriers of price and convenience when trying to connect small farmers to distributors/wholesale markets?
2. Are small farmers still interested in using aggregation services that potentially offer equal or less of a price premium if they must transport their produce to city hubs?
3. Can buyers improve their contract agreements to give growers greater certainty of production planning?
4. What issues should an aggregation entity address? (land access, marketing assistance, lack of time, infrastructure, finding customers, distribution system, strengthening demand, pricing, etc.)

First Processed Produce in Central KY, A Pre-Feasibility Study, 2016

This qualitative and quantitative study of the existing supply for wholesale processed produce, existing demand for basically processed food products, and preliminary assessment of benchmark pricing for Kentucky-grown produce assessed the need for additional services or other efforts to provide first-processed produce items in the central Kentucky region. To determine demand, authors consulted a FY2015 comprehensive list of local and Kentucky Proud products procured by UK dining, a geo-coded inventory of food system intermediaries and infrastructure, and 18 interviews with purchasing agents in the Bluegrass region. Data collected by the Lexington area bluegrass local food supply study and interviews with 12 producers informed the study's supply assessment. 2012 USDA Census of Agriculture data at three levels--state, 23 counties comprising central Kentucky, and 7 county local levels— contributed to the quantitative assessment of current produce production.

Relevant Takeaways for High South:

1. Buyers believe that consumers demand fresh local produce over processed local produce and purchase accordingly despite the options to incorporate frozen/chopped/first processed produce to serve in the off-season.

2. Orchardists do not face the same barriers as vegetable producers when selling to wholesale markets and meeting current contract requirements
3. Aggregating and selling to wholesale buyers and distributors requires coordination and trust between producers. Must also compete with producers who have established long-standing relationships and reputations with wholesale buyers.

Questions for Further Review:

1. What products are wholesalers looking for that farmers could focus on meeting the demand of and diversify their products
2. How do we facilitate the expansion of wholesale, GAP auditable produce production in Kentucky?
3. How can this entity address the problems with price premiums and still access wholesale markets when direct markets will pay a premium for local and/or organic produce, but wholesale markets won't?

Louisville Local Food Demand Analysis (2012)

One of the most noted and cited studies in the region with regard to local food demand is the 2012 Louisville Local Food Demand Analysis conducted by Karp Resources with support from Louisville Metro Government. This study examined the demand for local food among consumers, buyers, and distributors through interviews, focus groups, and surveys. This study indicated that consumers in the area are spending \$100 million in local food purchases and would be interested in spending an additional \$158 million. When that level of demand was combined with demand from buyers and distributors, the study reported an unmet local food demand of just under \$300 million.

Relevant Takeaways for High South:

1. Quality and price remain the greatest influencers on the buying decision.
2. Producers indicated a need for aggregation and processing points in close proximity to their farming operations and a need for help navigating requirements such as GAP.
3. Unmet local food demand appears to be strong, but meeting that demand will require competitive prices and consistent quality.
4. Many existing aggregator/distributor companies will continue to serve this demand and create competitive pressure on any new entrant.

Questions for Further Review:

1. How can a new entrant find a niche in serving producers and buyers to succeed in a low-margin business?
2. How can a new entrant develop relationships and trust required to secure suppliers and customers?

3. How does the growth of season-extending practices change the availability of fresh food in the region and how does a new aggregator/distributor use that growth?

Building the Local Food Economy, Louisville, Kentucky, 2008

The premise of this study is that Louisville, as the state's largest population center, has the potential to increase substantially the amount of food purchased from Kentucky farmers. The primary goal of the study was to identify strategies that will most effectively increase Kentucky farmer income through new or expanded sales to Louisville consumers, businesses and institutions. The study authors attempted to answer the following questions:

- What are the ways currently that food enters the Louisville economy, what is the magnitude of demand, and how much is locally grown?
- What is the current status of agriculture in Kentucky, particularly the region around Louisville?
- What are the marketing channels for Kentucky farmers in Louisville?
- Which of these marketing channels offer the best opportunities for increasing sales (in the short, medium and long term)?
- What policies, programs or facilities are needed to encourage or facilitate these new sales?
- How can changes to farm income that result from these policies, programs or facilities be measured?

Relevant takeaways for the Kentuckiana Food Aggregation Project:

1. Of 13 strategies identified by the researchers in this study to increase farm income by selling to Louisville buyers, the following had the most support from 90 farmers in focus groups (in this order): agritourism (66 votes), meat processing (66 votes), farmers' markets (63 votes), indoor public market (61 votes), local distribution company (41 votes), restaurants (40 votes)
2. Local supermarket chains utilize central warehouses for distribution to multiple stores and very few stores have the ability to source independently and from their own area. At the Produce Buyer meeting at the Kentucky Fruit and Vegetable Conference, several buyers described a common problem: their national distributors will not give them access to products that may be in higher-demand at the time unless they also purchase multiple easier-to-source products in high volumes, giving them less flexibility to purchase from local growers.
3. When considering any sources of supply or changes in procedures, the number one priority for the JCPS food division is food safety. In order to buy from farmers or any processors, JCPS requires that they be HACCP certified.

Questions for further review:

1. How have the assertions and amounts cited in this study changed since 2008?

2. What opportunities exist for an aggregation business to work with large institutional players such as Wal-Mart, Kroger, hospitals, correctional facilities, school systems?
3. How can this group build on the recommendations for local foods distribution company infrastructure shared in this study?