Feasibility Study

for a

Central Texas Food Hub

sfc

SUSTAINABLE FOOD CENTER

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EXECUTIVE SUMMARY

Central Texas study region

Central Texas is home to a vibrant and growing regional economy—one with significant market demand for local and sustainably-grown food. The rapid population growth driving the economy has also exacerbated pressures on the local food system, such as the availability of affordable farmland and the accessibility of fresh food for lower-income consumers. For example, Travis County, where Austin is located, loses the equivalent of about six football fields of cropland every single day (eight acres). The entire Central Texas region (see image to the right; also defined in Glossary) loses 223 acres of cropland every single day.[i] That equates to an area twice the size of New York City in five years! In addition, of the over 1.1 million residents living in Travis County, approximately 15.2% experience food insecurity. It is incumbent upon local food system stakeholders to develop sustainable market solutions that benefit producers and consumers alike.

Beginning in October 2017, a team of organizations in Central Texas set out to determine the feasibility of launching a new brick-and-mortar food hub. The project team included Sustainable Food Center (SFC), the National Center for Appropriate Technology (NCAT), Texas Center for Local Food, Farmshare Austin, and the City of Austin Office of Sustainability. The project team's goal was to understand the opportunities and barriers to a physical food hub in Central Texas that might allow small to mid-sized farms meet larger-volume demand in Austin and San Antonio, and to build on already existing initiatives to increase healthy food access for low-income and underserved populations. The study centered on two key questions: 1) Does Central Texas need something new or additional to bring more local, sustainably-grown fresh produce into the marketplace? 2) If yes, then what does that something new or additional look like? The team employed a three-pronged study design made up of a supply analysis, a demand analysis, and a landscape analysis to answer the two key questions.

The findings of both supply and demand analyses proved there was common ground among producers and buyers: producers are interested in diversifying to wholesale outlets and buyers are interested in purchasing more locally-grown, sustainable food. In order to provide reliable volumes and quantity of fresh produce, growers would likely need to aggregate in order to satisfy large wholesale orders. However, the project team determined that simply aggregating product would not be enough to ensure the success of a food hub in Central Texas. Other services would need to be offered to producers and buyers, either through the hub or outside service-oriented organizations. For instance, local small to mid-sized producers need greater access to farmland, more qualified and reliable labor, and wholesale readiness support to plan crops and determine prices that can meet large volume buyer needs. Large volume buyers need to know what is grown regionally and when local produce is seasonally available, as well as guidance to plan menus for local incorporation and support to purchase from local-oriented vendors.

The project team then assessed intermediary supply chain players and the external environment in order to understand strengths, weaknesses, opportunities and potential threats of starting a food hub. Sales to premium

direct-to-consumer markets were recognized as an existing strength, along with increasing consumer demand for local and sustainably-grown food. However, the intermediary supply chain for local growers continues to face obstacles towards achieving scalable success, such as inadequate volume to move product into institutional markets and the resource-intense nature of planning with multiple local growers. Lastly, where the project team saw opportunities to tap into public and private funding for food systems, they also saw threats stemming from rising infrastructure costs and other local economic pressures.

CONCLUSION AND RECOMMENDATIONS

The project team concluded that, in Central Texas, multiple assets need to be built and/or strengthened in order to bring more local, sustainably-grown fresh produce into the marketplace. Physical aggregation is necessary for small to mid-sized producers to be able to enter into larger-volume markets. However, the competitive analysis highlights existing intermediaries that could move into this space more quickly than endeavoring to build a new "brick-and-mortar" facility. The project team then identified persistent barriers at the farm level and at the large volume buyer level and ultimately recommends the actions listed below to strengthen existing aggregation and distribution of local, sustainably-grown produce. These actions represent a coordinated and collective strategy towards creating a robust, sophisticated and resilient regional food system.

Action	Timeframe
Provide business management & financial consultations for producers.	Immediate (2019-2020)
Build the Elgin Local Food produce processing center.	Near Term (2021-2023)
Matchmaking between producers and market accounts.	Immediate (2019-2020)
Assist producers to become wholesale ready.	Immediate (2019-2020)
Establish micro-aggregation nodes.	Immediate (2019-2020)
Facilitate land access for agricultural producers.	Near Term (2021-2023)
Develop a group purchasing or equipment share for producers.	Near Term (2021-2023)
Assist producers who are interested in transitioning to regenerative agricultural practices.	Near Tem (2021-2023)
Research the potential of a food industry cluster.	Long Term (2023-2028)
Support and outreach for Federal farm programs.	Immediate (2019-2020)
Strengthen farm labor force so producers can hire qualified labor.	Near Term (2021-2023)

INTRODUCTION

Central Texas[1] prides itself on a culture of supporting locally-owned, small businesses and buying locally made products. This community-based approach to enhancing regional economic prosperity extends to locally-grown food, value-added products and food retail establishments. The ethos of supporting local businesses, paired with population growth that routinely tops national charts, has built a vibrant regional economy and also given rise to significant latent market demand for local and sustainably-grown food.

Austin has a vibrant farm direct-to-consumer food supply chain, featuring 17 farmers' markets, almost a dozen direct delivery services and community supported agriculture (CSA) options and a multitude of locavore chefs who source directly from growers. San Antonio also has strong direct marketing outlets, boasting 22 farmers' markets, direct delivery services, CSA options, and a number of restaurants that source directly from area farmers. Although there has been a proliferation of farm direct sales outlets in the past decade, plateauing sales in the past few years have illuminated a certain degree of niche market saturation. The next logical step is expansion into larger volume markets where most consumers get a majority of their food. In essence, expand farmers' market values to wholesale scale. Many producers in Central Texas and throughout the state are expressing an interest in scaling up and diversifying their market channels to include wholesale. Concurrently, a growing number of grocers and institutions are prioritizing values-based purchasing decisions with a preference for sustainable, Texas-grown produce and animal protein.

Agricultural producers are struggling with increasing costs of land and greater distances to markets, while staggering amounts of farmland are being lost to development.

In addition to increasing demand, rapid population growth has given rise to a cascade of unintended consequences impacting producers' ability to grow food and consumers' ability to access food. Agricultural producers are struggling with increasing costs of land and greater distances to markets, while staggering amounts of farmland are being lost to development. The county where Austin is located loses eight acres of cropland are per day, which is equivalent to six football fields. The county where San Antonio is located loses almost 20 acres of cropland a day, which is equivalent to 15 football fields.[i] Mounting regional pressures on small to mid-size growers begets a sense of urgency to strengthen their sales, fortify their operations and ultimately ensure their business viability. On the consumer side, many long-time residents are being priced out of their homes and displaced to areas with uncertain access to healthy, affordable food. It is incumbent upon local food system stakeholders to recognize and address these impacts in order to develop sustainable market solutions. Both a growing population and stagnating rates of food insecurity demand immediate attention to reach unmet market needs.

Now is an opportune moment to strengthen regional food system production and procurement by creating pathways for small to mid-sized producers to sell to wholesale markets that value their differentiated product. This critical mass of interest is occurring at a time when national trends in food system development are also emphasizing value chain infrastructure. The project team saw an opportunity to support the construction of a sophisticated and resilient local food economy in Central Texas.

1 Central Texas is defined herein as the 23-county region that includes the Austin Metro Statistical Area, the San Antonio Metro Statistical Area and surrounding rural counties.

Scope

The project team set out to study the opportunities and barriers Central Texas farmers face in scaling up to meet demand for large-volume wholesale markets in Austin and San Antonio, and to build on healthy food access initiatives in Austin. The proposed hypothesis is that most small to mid-sized farmers in Texas need physical aggregation and distribution infrastructure in order to sell to larger volume markets. Implied within this hypothesis is the assumption that there is an opportunity for more transactions to occur between local food system partners (i.e. local buyers purchasing from local producers), and that the primary obstacle to these kinds of local transactions is a lack of aggregation and distribution infrastructure. Producers were defined as specialty crop growers within a 400-mile radius of Austin, with particular attention to small and mid-sized family farms. The buyers were defined as Institutions (school districts, hospitals, Colleges and Universities, corporate cafeterias), Grocery Retailers, Sustainable Food Center's Farm to Work modified-CSA project and the Fresh for Less[2] markets in Austin.

The team developed the following three research questions to study this hypothesis:

1. Does Central Texas need something new or additional to bring more local, sustainably-grown fresh produce into the marketplace in order to strengthen the viability of regional producers and improve consumer access to healthy, fresh food?
2. If yes, then what does that something new or additional look like?
3. Are the project team's proposed actions feasible, and under what conditions?

In order to answer these questions, we conducted primary and secondary quantitative and qualitative research over the course of eight months. The following assessments illuminated findings and recommendations which address ways in which latent and future demand for local food can be more completely met by local supply.

- A supply analysis assessed existing and potential production capacity, producer interest and readiness to sell into wholesale markets, and barriers to entry.
- A demand analysis assessed the potential demand volume, drivers of buyer interest in local fresh produce, procurement needs, and barriers to purchasing local produce.
- A landscape analysis assessed the existing landscape of intermediary activities, identified internal strengths and weaknesses along with external opportunities and challenges, and discovered critical gaps.

2 Fresh for Less is a City of Austin sponsored initiative that works with several non-profit organizations in Austin. The goal of the initiative is to increase access to fresh, affordable food in innovative ways, like community-based farm stands, mobile markets and healthy corner stores.

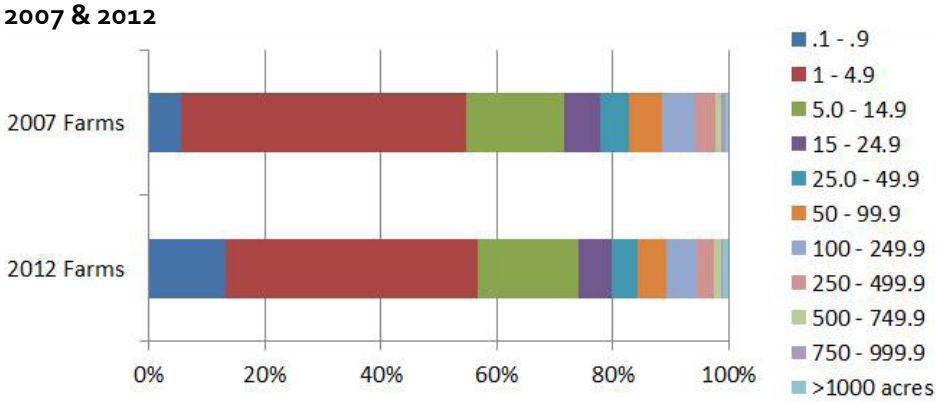
Background

Texas, a State of Agriculture

AGRICULTURAL LAND USE

Agricultural trends in Texas continue to mirror national trends towards increasing concentration of production among the largest farms. Although the total number of vegetable farms in Texas decreased by 2% between 2007 and 2012, the total number of acres in vegetable production actually increased by 1.6%. In 2012, the top 1% of farms in Texas accounted for 35% of total acres harvested for vegetables. As illustrated in Figure 2, between 2007 and 2012 all farm size categories less than 100 acres saw a decrease in number of farms (with the exception of an uptick in number of farms under 1 acre). Orchards saw a 21.2% decrease in number of farms and a 5.3% decrease in total number of acres during this same period.[i]

Figure 2: Percent of total farms by # of acres of vegetables harvested, 2007 & 2012



The term "Agriculture of the Middle" was recently coined to address this bifurcation of the US food system.[ii] Between small-scale enterprises selling specialty crops through direct marketing channels and very large farm operations selling commodities to multi-national firms, there's a disappearing middle segment of producers who are too big to sell direct to consumer and too small to compete with mega farms. This is in part due to the fact that producers face systematic challenges to scaling, including structural economic barriers and lack of infrastructure supports. Values-based food chains offer approaches to bridge this divide by building infrastructure and connecting Agriculture of the Middle farmers with markets that pay a fair price to cover costs. Some producers surveyed for this study report concerns similar to Agriculture of the Middle farmers and express interest in transitioning away from time and labor-intensive direct marketing to wholesale marketing.

There's a disappearing middle segment of producers who are too big to sell direct to consumer and too small to compete with mega farms.

A closer look at the Ag Census reveals pockets of agricultural activity that indicate a resurgence of family farming. Central Texas is notably right in the heart of one of these pockets. Between 2007 and in 2012, the region experienced a 14% increase in number of vegetable farms and a 9% increase in harvested vegetable acres. (See Table 1.) Orchard acreage declined by 6% from 2007 to 2012. Since 90% of orchard acres in Central Texas are in pecans, further analysis of orchard acres is not included in this study.[i]

At the same time as this resurgence of family farming in the region, the threat of fertile farmland loss looms large. Austin and San Antonio are quickly growing into peri-urban areas. Intense demand for new housing and commercial development pressures have led to a precipitous 20% decline in area cropland

between 2007 (2,049,086 acres) and 2012 (1,642,163 acres). The amount of cropland lost in 5 years is twice the size of New York City, and is the equivalent of losing 223 acres of cropland every single day.[i]

Table 1: Vegetable acres and cropland totals in Central Texas

Total Vegetable Farms	2012	351
	2007	307
Total Acres of Harvested Vegetables	2012	21,523
	2007	19,706
Total Acres of Cropland	2012	1,642,163
	2007	2,049,086

AGRICULTURAL ECONOMICS

In 2016, the Capital Area Council of Governments (CAPCOG) researched the question "Just how much of what we actually eat (in the CAPCOG region[3]) comes from local sources?" The study found that, in 2015, food production sales in the 10-county region exceeded $2.32 billion, which underscores agriculture's economic significance to the region. Further analysis shows that only 6% ($146.6 million) of those local food production sales were actually sold within this same region.[iv] This indicates presumable opportunity to shift more local food production sales into local markets.

Furthermore, the $146.6 million of In-Region food production sales was only 2.7% of total food retail sales in the region ($5.4 billion). Food retail sales is inherently greater than food production sales, since food retailers need to cover additional value-added costs such as labor, real estate and building costs. However, these numbers provide a sense of scale. Less than 3% of what we spend on food in the Capital Area is actually produced in the same region. If that figure doubled to 6%, millions and millions of dollars would be kept in the local economy.

Farm to Work at the Stephen F. Austin Building Photo credit: Chris Lifford

Also of note, the national farm share of every food dollar recently hit an all-time low, dipping down to 14.8 in 2017.[iii] Declining revenue does not bode well for any farm business, yet is particularly worrisome for small to mid-sized diversified specialty crop growers who operate on razor thin profit margins and do not receive government price support. It is becoming more and more urgent for communities across the country to take action and re-invest in their regional food economies. Central Texas is well positioned to build a vibrant, regional food economy that strengthens local food production and makes a greater percentage of that locally-grown food accessible to all residents.

Regional Demographics

Central Texas is currently home to 4.7 million residents, after experiencing a period of growth throughout the region.[v] As of 2017, the top five most populated counties,[vi] in order, are:

1. Bexar County (the county in which San Antonio is located)
2. Travis County (the county in which Austin is located)
3. Williamson County (a.k.a. "North Austin" directly North of Travis County)
4. Hays County (a.k.a. "South Austin" directly South of Travis County)
5. Guadalupe County (Northeast of San Antonio)

3 The 10-county region including and surrounding Austin MSA: Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Lee, Llano, Travis and Williamson Counties

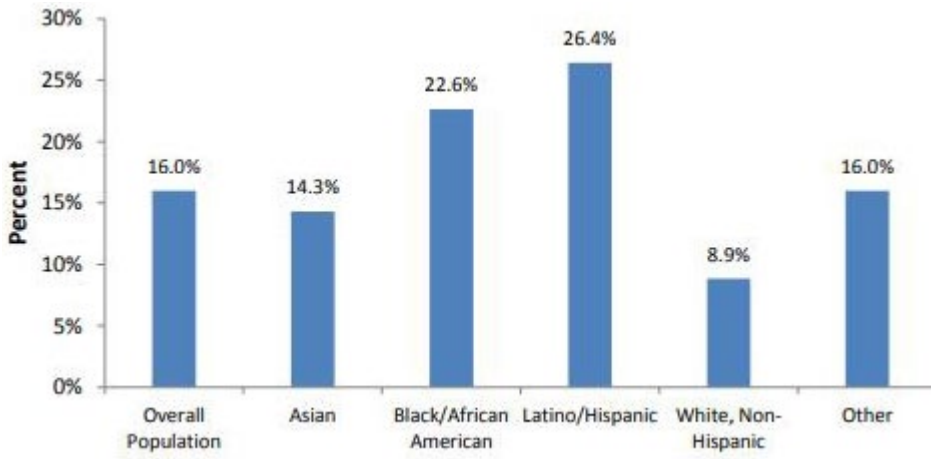
Nationally, Hays and Kendall Counties were in the top five counties for percentage growth (2nd and 3rd respectively) from 2015 to 2016.[vii] The population in Central Texas is projected to continue to grow over the next five years. The CAPCOG region is projected to grow by 14% (300,000 residents) between 2017 and 2025.[v] The 13-county Alamo Area Council of Governments (AACOG) region[4] is projected to grow by 11% between 2015 and 2024.[viii]

As the Central Texas population grows, affordability becomes a challenge within the most populated areas as well as within rural communities. Between 2009 and 2016, median home values in the Austin Metropolitan Statistical Area (MSA) rose 28% while incomes only rose 16%. Affordability challenges are projected to worsen within the Austin city limits and drive many low wage workers into suburban and rural areas.[v] According to AACOG's Economic Strategy 2018-2023, rural communities are also facing issues of stagnant wages and a need for additional affordable housing. Approximately 18.4% of Bexar County residents and 16.0% of Travis County residents live below the Federal Poverty Line.[ix] Eleven percent of Bexar County residents experience food insecurity (205,500 residents), which is lower than the national average (12.9%).[x] Approximately 15.2% of Travis County residents experience food insecurity (174,000 residents), and an estimated 34% of residents pay more than 30% of their income for housing, which leaves less money for other necessities such as food.[xi]

It is becoming more and more urgent for communities across the country to take action and re-invest in their regional food economies.

Income inequality exists between and within counties and disproportionately affects females, people of color and children. While the median family income (MFI) in Bexar County is just below $60,000, there are zip codes with MFI's as low as $15,000. San Antonio ranks near the top of U.S. cities with income inequality and segregation, and in 2010 the San Antonio-New Braunfels area was identified as the most income-segregated metropolitan area.[ix] In Travis County, a higher proportion of Black/African American and Latino/Hispanic communities experience poverty than non-Hispanic White populations, as shown in Figure 3.[xii]

Figure 3: Poverty by race/ethnicity, Travis County 2011-2016



4 The 13-county region including and surrounding San Antonio MSA: Atascosa, Bandera, Bexar, Comal, Frio, Gillespie, Guadalupe, Karnes, Kendall, Kerr, McMullen, Medina and Wilson Counties

National Food Hub Scene

STATISTICS

Food hubs are defined as "businesses or organizations that actively manage the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand."[xiii] The number of operating food hubs in the United States has nearly tripled in the past decade, from 136 in 2007 to 360 in 2017.[xiv]

This extraordinary proliferation of regional food system assets represents a nation-wide movement towards strengthening values-based food economies. In addition to providing core logistics and operations services, food hubs also attempt to achieve broader social impact and thus usually provide a mix of services for producers, buyers and the community. Almost all hubs that responded to the 2017 National Food Hub Survey said the following four values were related to their mission:

1. Improve human health.
2. Increase small to mid-sized producers' access to markets.
3. Ensure that producers receive a fair price.
4. Promote environmentally sensitive production practices.

Recent data indicates a food hub survival rate of approximately 88%, which is well above the 53% survival rate for all types of new businesses.[xiv] While it appears that the formation of new hubs may be slowing, the 2017 National Food Hub Survey discovered that existing hubs are demonstrating profitability and longevity. However, it is important to recognize the razor thin profit margins in this industry and therefore approach any new or differentiated business endeavor with judicious planning and management.

While it appears that the formation of new hubs may be slowing, the 2017 National Food Hub Survey discovered that existing hubs are demonstrating profitability and longevity.

LESSONS LEARNED [xiv] [xv]

It is important to understand common hub problems and proactively plan to manage and mitigate risk. The most essential component of food hub success, as distilled from reports, conferences, webinars and meetings, is a solid business plan with a clear financial model. "There is no mission without the margin." Along with a strong plan for financial viability, the following themes also emerged as key success factors.

- **A realistic business plan with a financial model for profitability.** Feldstein[iv] and Barham[xiii] identified that a strong business plan is key to food hub success. The business plan is where the core purpose and defensibly unique value proposition are articulated, operations and services are outlined and anticipated challenges are addressed.
- **Strong financial documents with benchmarks.** Financial documents are the backbone of any proposed business. They outline how much money and what type of financing is needed to fund startup, maintain necessary cash flow and pave a roadmap for growth. They also set realistic benchmarks: what gets measured gets managed.
- **Knowledgeable and experienced staff.** Staff inexperience can be a death knell for food hubs. Conversely, experienced and capable staff, especially in upper management, can

manage day-to-day operations and support growth and be the make-or-break critical factor for food hub survival. If food hubs do not invest in professionals with proven industry experience and strong aptitude for organization, then they risk operational inefficiencies at best and high rates of staff turnover at worst. This can drain resources, prevent growth and ultimately lead to food hub business failure.

- **Know your farmers, know your customers.**
  Balancing supply and demand is one of the top three challenges cited by food hubs. It is important to understand the target markets' needs and purchasing patterns, as well as growing seasons, crops and factors that can influence production. Relationships with buyers and producers are critically important; it is recommended to begin with a core group of buyers and wholesale ready producers and scale operations from that reliable and consistent foundation of business. Start small and savvy, then scale.

Relationships with buyers and producers are critically important.

Lightsey Farm peaches
Photo credit: Ha Lam

SUPPLY AND DEMAND ANALYSIS

The supply and demand analysis explores the pivotal points in meeting and balancing the scale-appropriate needs of small and mid-size producers with the scale-appropriate needs of larger-volume buyers.

Methodology

Supply Analysis

Fruits and vegetables were the two main product categories selected for in-depth study. This decision was made as a matter of efficiency: to gather start-up information for a few focused product categories. Future hub growth could include incorporation of additional product categories, such as meat, dairy and cheese, grains and value-added products.

Farmer involvement was essential to this process.

Farmer involvement was essential to this process. As such, we recruited a Farmer Advisory Team of seven fruit and vegetable growers to 1) review and provide feedback on the Producer Survey and share the survey amongst their networks, 2) review and provide feedback on farmer focus group questions and help bring growers to the table and 3) review and provide feedback on the feasibility report and recommendations. Input from our initial phone call with the Farmer Advisory Team in December 2017 helped identify the scope of the survey—to primarily focus on fruits and vegetables—as well as survey questions.

PRIMARY RESEARCH

Primary research was conducted via a 24-question online Producer Survey, an outreach session at the 2018 annual conference of the Texas Organic Farmers and Gardeners Association (TOFGA), and four Producer Focus Groups.

The Producer Survey (see Appendix B) was open from January 26th to March 30, 2018 and distributed via e-mail to individual producers, producer associations and agricultural service providers throughout the state, promoted on social media platforms, linked on project team organizational websites, promoted to individual farmers at SFC's two farmers' markets and announced at the 2018 TOFGA Conference. Sixty-three respondents completed the survey.

The four Producer Focus groups were held between February 25th and April 24th in regions surrounding Austin: North (Waco), East (Brenham) and South (San Marcos and McAllen). Each two-hour focus group was led by a trained facilitator and participants were asked questions in four key topic areas: 1) Selling, 2) Producing, 3) Pricing and 4) Food Hub Model. (See Appendix C.) Farmers were recruited via direct contact, social media outreach via collaboration with existing farmer organizations and a total of 28 producers attended these focus groups. Thirty-seven participants attended the one-hour, interactive TOFGA Food Hub Feasibility outreach session on February 3rd, which began with a short presentation on food hubs and spent the rest of the time aggregating feedback on wholesale benefits and challenges, as well as interest in a food hub.

SECONDARY RESEARCH

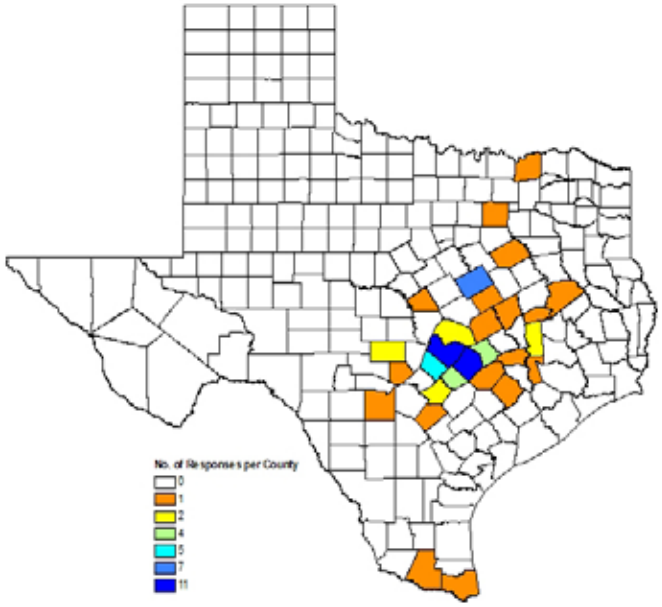
Secondary research on existing regional and statewide production was gathered from the 2012 USDA Ag Census.

Demand Analysis

The project team identified and studied four potential market categories in the greater Austin area and San Antonio, which are situated approximately 75 miles apart from downtown to downtown.

1. Institutions – Universities, Hospitals and Healthcare, School Districts, Corporate Cafeterias and Special Event Facilities
2. Grocers and Retailers
3. Fresh for Less Markets
4. Farm to Work Community Supported Agriculture (CSA)

Figure 4: Location of producer survey respondents



PRIMARY RESEARCH

Primary research was conducted March 2018 – July 2018 and consisted of a 28-question online LFPP Buyer Survey, a 15-question online Grocery Supply Survey and phone interviews with buyers. The LFPP Buyer Survey (Appendix D) assessed institutional interest in and barriers to purchasing locally-grown produce. The survey was distributed to public school food service directors in Central Texas, as well as procurement coordinators at Universities, corporate cafeterias, hospitals and special event facilities. Twenty-four institutional buyers responded to the survey. The Grocery Supply Survey (Appendix E) assessed retail interest in and barriers to purchasing locally-grown produce. This survey was distributed to ten grocery retailers as potential customers of the food hub, of which three responded to the survey. Some of the survey respondents self-identified as being interested in having a follow-up interview with the project team. Six of the institutional buyers were interviewed, either in person on by phone, and all three of the grocery retail buyers were interviewed.

Table 2: Summary of primary research methods

Supply Analysis		
Producer Survey, 24 questions	January 26-March 30, 2018	63 completed
Outreach session, TOFGA Conference	February 3, 2018	37 participants
Producer Focus Group, Waco	February 25, 2018	8 participants
Producer Focus Group, San Marcos	March 5, 2018	4 participants
Producer Focus Group, Brenham	March 21, 2018	6 participants
Producer Focus Group, McAllen	April 24, 2018	10 participants
Demand Analysis		
Buyer Survey, 28 questions	March 19 – July 31, 2018	24 completed
Grocer Survey, 15 questions	March 19 – July 31, 2018	3 completed
Buyer Interviews	March 19 – July 31, 2018	9 interviews

SECONDARY RESEARCH

The project team compiled secondary data to assess market potential. New Venture Advisors' MarketSizer® tool[5] was used to calculate demand for fruits and vegetables in Central Texas. Quantitative sales data from SFC's Farm to Work modified-CSA program were reviewed. Quantitative sales data from the Fresh for Less Markets were also reviewed.

5 The MarketSizer tool was created by New Venture Advisors to estimate unmet demand for locally produced food in a chosen geographic area. It can be accessed online at www.newventureadvisors.net/tools

Findings

Producers

CHARACTERISTICS

All 63 survey respondents provided their location and represented a total of 28 counties. A majority of the respondents (40) were situated in Central Texas counties (see Figure 3). Seventy percent (45 producers) had been farming or ranching for 10 years or fewer. Respondents reported total farm size ranging from 0 to 100 with a mean of 27.5 acres and a median of 14.5 acres; fifty eight percent of respondents reported total farm sizes of 25 acres or less. Almost all specialty crop production was reportedly occurring on 15 acres or less. Almost all orchard acreage was reportedly occurring on 10 acres or less.

Beginning farmers are highly receptive to wholesaling, and efforts need to be made to reach out and include this demographic in initiatives to increase wholesale capacity.

Overall, respondents were very interested in serving wholesale markets. On a scale of 0 (not at all interested) to 100 (very interested), the mean was 74.1% and the median was higher at 80.0%. In fact, 20 of the 62 responses to this question indicated 100% interest in selling to wholesale markets. The highest average interest in selling to wholesale markets was among farmers who have been farming for 1-5 years (78.4%), and the lowest average interest in selling to wholesale markets was among farmers who have been farming for 26 or more years (50.8%) Table 3 provides a summary of wholesale interest per number of years farming. The discrepancy in wholesale interest was not studied further, so any interpretation would be mere conjecture. It is worth noting, however, that beginning farmers are highly receptive to wholesaling, and efforts need to be made to reach out and include this demographic in initiatives to increase wholesale capacity.

Table 3: Interest in selling wholesale

Years farming or ranching	Responses	Total specialty crop acres	Total orchard acres	Additional available acres*	Average wholesale interest
1-5	24	44	63	80	78.4%
6-10	21	36	5	58	71.4%
11-25	9	62	4	154	74.9%
26 or more	10	60	14	78	50.8%
Totals	**64**	**202**	**85.68**	**370**	

*Additional acres respondents are willing to put into specialty crop production

Respondents indicated selling through a mix of sales channels. The four most common sales channels are:

1. **Direct-to-customer through Farmers Markets and Farmstands:** 74% of respondents (46); accounts for an average 55% of these respondents' total sales
2. **Direct-to-restaurant:** 42% of respondents (26); accounts for an average 14% of these respondents' total sales
3. **Direct-to-consumer through Customer Supported Agriculture (CSA) and SFC's Farm to Work project:** 40% of respondents (25); accounts for an average 24% of these respondents' total sales
4. **Wholesale to distributors, brokers and/or grocers:** 36% of respondents (22); accounts for an average 11% of these respondents' total sales

Only a handful of respondents sell directly to institutional wholesale markets, such as universities and corporate cafeterias. No respondents sell directly to school districts.

These results illustrate the divide between producers' ability to sell direct-to-consumer and direct-to-wholesale aggregators, versus the inability to sell directly to wholesale institutional buyers. The data is telling us there are compelling barriers beyond price which hinder small to mid-sized producers' ability to sell directly to wholesale institutional markets. Selling to a distributor or broker provides additional services, such as marketing and aggregation/coordination to meet large volume demand. Selling directly to a grocer offers much more flexibility than selling to institutional buyers; grocers often manage dozens of vendor accounts and can more readily accommodate seasonal products.

CHALLENGES FACING PRODUCERS

Growing specialty crops can be unpredictable and present very little room for error. Producers must navigate around obstacles that can often impact their ability to provide reliable, consistent product at predictable volume. Common themes arose in the focus groups, and were corroborated by the project team's experience working with Texas growers.

Categorizing these challenges as internal or external provides a reference point for where to focus resources and initiatives: at the farm-level or at the wider systems level.

The data is telling us there are compelling barriers beyond price which hinder small to mid-sized producers' ability to sell directly to wholesale institutional markets.

Buyers

CHARACTERISTICS

Seventy-one percent of responses (17) to the LFPP Buyer Survey were Independent School Districts (ISD). The other 7 respondents were hospitals (3), colleges/universities (2), corporate campuses (1) and a special events space (1). Respondents were located in Austin and San Antonio. Seventy-one percent of respondents reported that they are self-operated. Upon further inspection, 88% of ISDs (15 out of 17) reported being self-operated, while 71% of non-

Table 4: Challenges facing producers

Internal Challenges	External Challenges
• Difficult to track production costs and determine accurate pricing. • Lack of understanding of requirements and benefits of Good Agricultural Practices (GAP) certification and Food Safety Modernization Act (FSMA) regulations. • Difficult to differentiate product and educate consumers about the value of their sustainably-grown and raised, local produce. • Difficult to build relationships with buyers. • Costly to make multiple deliveries per week and either spend a lot of time in the car or pay employees to drive all around town.	• Increasing land costs, especially cost of viable farmland. • Shortage of qualified and dependable labor. • Lack of market predictability (e.g. rarely have a buyer before planting). • Increasingly unpredictable weather events making farming more risky.

school respondents (5 out of 7) are managed by a Food Service Management Company (FSMC). It is important to note that non-school respondents indicated greater overall flexibility in produce purchasing decisions (71% moderately flexible) than ISDs (18% very flexible and 35% moderately flexible). This is due to a variety of reasons: Schools that participate in the National School Lunch Program (NSLP) must adhere to Federal standards for school meals served. These standards establish required serving sizes for five food groups (grain, meat/meat alternate, vegetable, fruit and dairy) and required serving sizes within vegetable subgroups (red & orange, dark green, beans & peas, starchy and other). In addition, school districts that participate in the NSLP must adhere to specific procurement requirements that ensure open and competitive purchasing practices. Lastly, school districts that participate in the NSLP receive Federally mandated reimbursements for free and reduced meals served. School districts are reimbursed a mere $3.31 for every meal they serve to a child at no cost (effective July 1, 2018 – June 30, 2019). Meal standard and procurement requirements combined with maintaining extremely low per unit meal costs can prevent an ISD from exercising much flexibility in purchasing decisions.

There appears to be sufficient institutional interest in local produce with moderate purchasing flexibility to further explore these markets as potential customers of a food hub.

An emphasis on purchasing local very much aligns with a majority of respondents' company missions (58%) and somewhat aligns with 33% of respondents company missions. Schools overwhelmingly define local as "grown within the state of Texas," which mirrors the "Texas-grown" definition of local established by the state regulatory agency over Child Nutrition Programs (Texas Department of Agriculture). Non-school institutional buyers most commonly define local as "Product grown within 200 miles of consumption." A compelling 75% of buyers (18) currently buy local produce, yet a small percentage of total produce food costs (average 10%) go to local purchases. Nine out of 24 respondents indicated willingness to pay more than 5% above current wholesale prices for local food. These findings represent great market potential, as well as allude to the many challenges still associated with local procurement.

Braune Farms
Photo credit: Ha Lam

Based on these general buyer profiles, there appears to be sufficient institutional interest in local produce with moderate purchasing flexibility to further explore these markets as potential customers of a food hub. The next few sections will illuminate the needs and operational logistics of these buyers in comparison to grower needs and logistics in order to determine if and how to create successful selling and buying relationships.

Two of the three Grocery Supply Survey respondents represented large grocers and one was a local grocer. The grocery buyers do not use advance contracts to purchase fresh produce. For these buyers, "local" also means produce grown anywhere in the state. The most commonly purchased local produce items are watermelons, citrus and sweet onions. All the buyers indicated that purchasing locally-grown produce was very important to their companies, but none of them indicated they would pay more than 5% above market price to specifically target Texas-grown produce. Their biggest barrier to selling more Texas-grown produce was the difficulty locating reliable sources for the items. The next biggest barrier was the inconsistent availability of produce, followed by the barrier of food safety concerns. Only the smallest of the retailers surveyed would consider purchasing cosmetically imperfect produce in order to get Texas-grown produce on their shelves. And only this retailer would not require its grower vendors to be Good Agricultural Practices (GAP) certified.

CHALLENGES FACING BUYERS

Institutional buyers who purchase at wholesale volumes operate under a defined set of efficiencies. They work with a limited number of fresh produce vendors—two to three on average, and rarely more than three. They communicate with their fresh produce providers frequently, often at least once a week or more. They're accustomed to managing produce orders with large distribution companies, and commonly have long-term contracts ranging anywhere from three months to two years.

Grocery buyers, on the other hand, work with a very large number of Texas grower vendors. They also communicate with fresh produce providers frequently, often more than once a week. Since they're accustomed to managing produce orders with a broad range of vendors, contracts are not very common, especially contracts with individual growers.

Our research identified the following top three barriers institutions face to purchasing more local produce (in order, with #1 being the greatest barrier):

1. **Inconsistent availability of product**. This arises in terms of year-round supply due to the ebbs and flows of seasonality, week to week variations in volume and produce sizes that do not meet product specifications.
2. **Pricing too high**. A majority of LFPP Buyer Survey respondents aren't willing to pay more than 5% above wholesale prices for local produce. However, nine of the 24 respondents indicated a willingness to pay significantly higher prices than current wholesale prices (>5%). Whether or not this is borne out in practice remains to be seen.
3. **Sourcing / difficult to locate**. If local produce is not provided by contracted vendors, it can be difficult for buyers to find a local produce connection. One buyer who was interviewed stated that if they were guided towards specific local growers, they would be more inclined to push for those products to be made available through their fresh produce distributors.

Another challenge cited by buyers who were interviewed is the limited capacity to plan for and prepare local produce. They indicated a need for local produce vendors to provide assistance in planning seasonal menus, writing local product specifications and training staff on fresh produce preparation.

Institutional buyers indicated a need for local produce vendors to provide assistance in planning seasonal menus, writing local product specifications and training staff on fresh produce preparation.

Table 5 (following page) provides a side-by-side look at where the pain points are on both sides of the equation. Areas of overlap indicate greater potential for impact and are excellent starting points to begin building bridges between local supply and institutional demand. This chart illuminates the importance of determining accurate and competitive prices; ensuring consistent quantity of product grown and harvested; and institutional marketing and capacity-building to plan for, procure and prepare more locally-grown produce.

Crops

Institutional buyers purchase an assortment of fruits and vegetables, many of which are grown in Texas. (See Appendix F: Seasonality Assessment.) The most common vegetables purchased are carrots, romaine lettuce, tomatoes, potatoes, onion, squash (did not specify summer or winter), zucchini, broccoli, cucumber, celery and bell peppers. The most common fruits purchased are oranges, apples, bananas, melons and strawberries.

All buyers purchase fresh unprocessed produce, 83% buy fresh minimally processed produce, and 67% buy processed frozen produce. Of note, 71% of buyers (17) are willing to buy seconds or cosmetically imperfect produce. It is important for local food distributors to work closely with buyers in order to help write detailed and accurate produce specifications.

Table 5: Comparison of challenges facing producers and institutional buyers

Producers	Buyers
• Difficult to track production costs and determine accurate pricing. • Increasing land costs, especially the cost of viable farmland. • Lack of understanding of GAP certification and FSMA regulation. • Shortage of qualified and dependable labor. • Difficult to differentiate product and educate consumers about the value of their sustainably-grown and raised, local produce. • Difficult to build relationships with buyers. • Increasingly unpredictable weather events are making farming more risky. • Lack of market predictability. • Costly to make multiple deliveries per week.	• Iconsistent availability of product throughout the year. • Higher price points. • Inconsistent volume of product from week to week. • Difficult to source local product from current vendors and to find new local produce vendors. • Limited capacity to plan for and prepare menu items that include seasonal produce ingredients.

It is important to determine accurate and competitive prices; ensuring consistent quantity of product grown and harvested; and institutional marketing and capacity-building to plan for, procure and prepare more locally-grown produce.

Production Volume

Production volume was addressed from two angles:

1. Current production, as determined by producer survey data and the 2012 USDA Census of Agriculture; and
2. Potential production, as determined by producer survey data

CURRENT VOLUME

Over half of the survey respondents (36) indicated a greater than 75% interest in selling to wholesale markets. In aggregate, these producers indicated they currently grow specialty crops on a total of 147 acres and have a total of 12 acres in orchard. Since the majority of orchard acres in Texas are in native pecan production, the volume analysis will only consider specialty crop production. Data from Central Texas are presented to better understand our regional production. In the 23-county region of Central Texas, there are 351 farms harvesting 21,523 acres of vegetables. Of note, Frio county has the most vegetable acres (14,746).[i] This represents $35 million in local produce production. (See Table 6.)

POTENTIAL VOLUME

The project team also assessed whether regional produce production is capable of increasing as local fresh produce aggregation and distribution efforts attempt to reach a greater share of the market. It is worth acknowledging here that this section focuses purely on volume potential, while other sections will address the complexities of both scaling an existing operation and onboarding new wholesale vendors (a.k.a. achieving wholesale readiness).

The Producer Survey asked producers how many additional acres they would be willing to put into production that is not currently in production if it was the right financial decision for their farm. Respondents who indicated greater than 75% interest in selling to wholesale markets have an additional, aggregate 249 acres at their disposal that they are willing to put into production. This represents a little over $4 million in potential local food production sales, which is greater than the combined produce budgets for Austin Independent School District, University of Texas at Austin and Austin Convention Center.

Market Size

Demand is represented herein by the only buyers for which annual produce budget information was available. The combined annual purchasing power of Austin Independent School District (AISD), The University of Texas at Austin (UT) and Austin Convention Center is a grand total of $3,236,676 million spent on produce. Northeast ISD in San Antonio has an annual produce budget of $1,757,000. The Fresh for Less markets procure $53,578 of produce annually. The Farm to Work modified CSA program facilitates $168,000 in annual farm direct sales to employees at worksites in Austin (36), San Antonio (2) and Houston (3). Displaying the supply and demand side-by-side illustrates sufficient existing production to meet demand. It also forecasts adequate land potential on which to scale production and satisfy a growing appetite for local fresh produce.

Table 6 compares the existing and potential production to the market opportunity within Central Texas. It provides a sense of how supply and demand compare to one another in aggregate terms, and brings us one step closer to understanding whether or not regional supply and demand are right-sized economies. At first glance, it appears that local food supply can start to meet demand. However, supply actually meets demand at price. Producers need to sell at a price that generates profit and buyers need to buy at a price that's competitive with existing costs. Further study needs to be done to:

1. determine which, if any, locally-grown specialty crops have a competitive pricing advantage;
2. establish accurate farm product pricing and reduce on-farm costs of goods sold (e.g. through a group purchasing option); and
3. reveal pockets of institutional demand where buyers are willing and able to pay premium prices.

At first glance, it appears that local food supply can start to meet demand. However, supply actually meets demand at price. Producers need to sell at a price that generates profit and buyers need to buy at a price that's competitive with existing costs.

Table 6: Central Texas supply and demand comparison

Supply*			Demand**	
Existing	Survey Respondents (147 acres)	$2,381,400	Austin ISD, UT and Austin Convention Center combined	$3,236,676
	Central Texas (21,523 acres)	$348,672,600	Northeast ISD (in San Antonio)	$1,757,000
	Total Existing Supply* **	$351,054,000	Fresh for Less Markets	$53,578
Potential	Survey Respondents (249 acres)	$4,033,800	Farm to Work	$168,000
	Total Potential Supply	$4,033,800	**Total**	$5,215,414

*10,000lbs / acre / year and $1.62 / lb . This calculation is derived from a University of Texas Master of Science in Community and Regional Planning. thesis.[XVI] It was approved by a Supervising Committee, however, has not been peer-reviewed for publication. The project team accepts this approximate yield per acre for Central Texas production.

**Food purchase amounts. Percentage of food purchase that goes to farmer varies.

***Since 66% of survey respondents live in Central Texas, this calculation of total existing supply includes duplication of some farms.

The Austin and San Antonio markets extend well beyond the buyers represented above and in Table 7 (following page). According to the NVA MarketSizer® Tool, the estimated market size for fruits and vegetables in Central Texas is nearly $1,000,000,000, a.k.a. one Billion dollars ($444 million in the Capital Area and $503 million in the Alamo Area). The key is to find pockets of wholesale demand where buyers are willing and able to pay a premium for values-differentiated produce. Table 7 provides a list of Central Texas institutions and grocers. This list is not exhaustive, and is rather intended to start naming and locating some of those potential pockets of demand. In addition to this list, the county in which Austin is located is home to 24 school districts with a total of 166,059 students.

The county in which San Antonio is located is home to 35 school districts with 351,349 students.[xvii] Nationally, 90% of students eat lunch at school and 20% of students eat breakfast at school.[xviii]

Table 7: Name and location of potential pockets of demand

Institution Type	Austin Area	San Antonio Area
Colleges and Universities	• Austin Community College • Concordia University Texas • Huston-Tillotson University • Southwestern University • St. Edwards University • Texas State University • The University of Texas at Austin	• Our Lady of the Lake University • St. Mary's University • University of Texas at San Antonio • Trinity University • University of the Incarnate Word
Hospital Systems	• Baylor Scott and White Health • Seton Healthcare Family • St. David's HealthCare	• Baptist Health System • Methodist Health System • Christus Santa Rosa Care
Corporate Campuses	• AMD • Apple • Bazaarvoice • Dell • eBay • Facebook • Freescale • General Motors • Google • Hewlett-Packard • HomeAway • IBM • National Instruments • Oracle • Samsung • Visa	• Boeing • Frost Bank • NuStar Energy • Rackspace • Southwest Bell • Tesoro • Toyota • USAA • Valero
Grocers	• Central Market • Fresh Plus • HEB • Natural Grocers • Sprouts • Wheatsville • Whole Foods	• Central Market • Fresh Plus • HEB • Natural Grocers • Sprouts • Whole Foods

Producer Certifications and Buyer Requirements

The project team explored the degree to which current growing and handling practices match buyer needs and preferences. The following information is summarized in Table 8: Producer Certifications and Buyer Requirements.

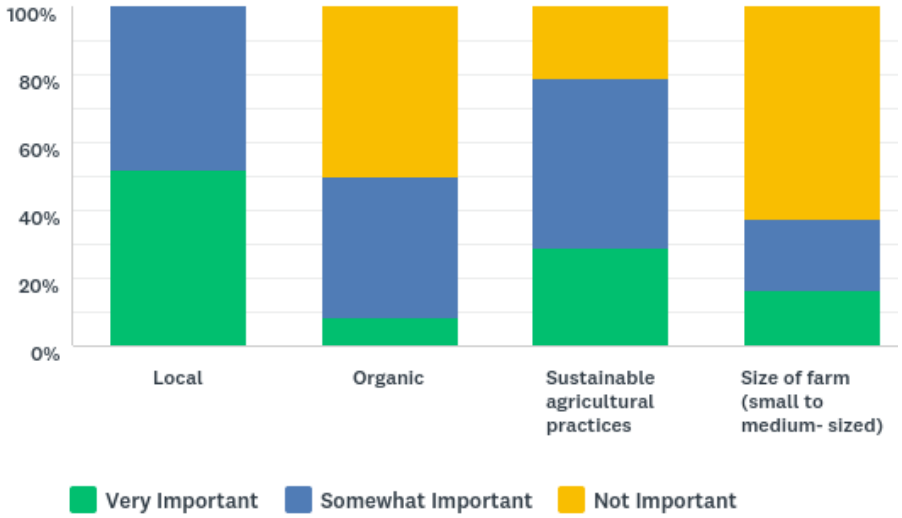
GROWING PRACTICES

Only 17% of Producer Survey respondents (11) are certified organic, yet 73% indicated they use organic (28 respondents) or sustainable (18 respondents) practices. Buyers put a much higher priority on the values of "Local" and "Sustainable agricultural practices" versus "Organic" and "Size of farm (small to medium-sized)," (see Figure 5). Producers and buyers seem to equally value sustainable growing practices, without necessarily having or needing a certification to prove compliance. It will be necessary, however, to establish shared definitions of "sustainable" as selling and buying relationships are created.

FOOD HANDLING

Nearly one-third of producers are not familiar with GAP certification, and only a handful of producers (4) are GAP certified. Producers were not asked about Food Safety Modernization Act (FSMA) certification, although those Federal

Figure 5: Buyer ranking of value-added attributes of fresh produce



requirements are on the horizon and of concern to many small to mid-sized producers. On the buyer side, 17% of respondents require GAP certification and 8% require FSMA Compliance Certification. Those percentages are likely higher, since 63% of respondents indicated they do not know what food safety certifications they require of fresh produce vendors. Producers will need support in order to meet buyer requirements for food safety standards.

The key is to find pockets of wholesale demand where buyers are willing and able to pay a premium for values-differentiated produce.

INSURANCE

Producers were not asked what, if any, insurance they carry. Buyers indicated limited knowledge of their insurance requirements. Nine LFPP Buyer Survey respondents skipped this question entirely and another 5 buyers commented under "Other" that they do not know. The remaining 10 respondents all indicated General Liability requirements ranging from $500,000 to $10 million. Eight of these 10 respondents also require Product Liability coverage ranging from $500,000 to $10 million.

Table 8: Producer certifications and buyer requirements

Producers		Buyers
Organic certification	17% (11 producers)	8% (2 buyers) said very important. 42% (10 buyers) said somewhat important.
Organic (non-certified) or Sustainable practices	73% (46 producers)	29% (7 buyers) said very important. 50% (12 buyers) said somewhat important.
GAP certification	6.3% (4 producers)	17% (4 buyers)**
FSMA certification	NA*	8% (2 buyers)**
Insurance	NA	10 require General Liability coverage. 8 require Product Liability coverage.

*NA = Not Asked

** 65% (13 buyers) did not know what food safety certifications they require.

Additional Findings

A couple additional findings arose as valuable considerations for food hub development.

Traceability. Traceability was either very important (42%) or somewhat important (50%) to LFPP Buyer Survey respondents. In addition to food safety controls, buyers who were interviewed expanded on this topic. They underscored the importance of knowing the farm story behind how the local produce is grown and raised. This is especially true for food service managers who see an opportunity to market local food to their dining customers.

Contracts. A majority of producers (63%) indicated they would be more likely to sell to a wholesale distributor or food hub if a growing agreement or contract were included. However, almost a third of producers responded they "Don't know" whether they'd be more or less likely to sell to a wholesale distributor or food hub if a growing agreement or contract were included. This may signify an indifference to contracts as well as unfamiliarity with such agreements. Producers who provided "Other" as a response reported either they were not interested in selling wholesale or that flexibility in products grown was key to the usefulness of a contract, since it is very difficult to be obligated to certain crops and volumes when natural disasters can happen unexpectedly. It goes without saying that contracts are a complicated topic and can serve a variety of purposes under a wide array of negotiated terms. Any hub will need to have access to a legal expert who can advise on this topic and provide assistance to producers and buyers.

Institutional buyers underscored the importance of knowing the farm story behind how the local produce is grown and raised.

Champions are Key. There are different levels of decision-making authority at an institutional-level, especially when dining services are food service company managed by an external company. Leadership needs to prioritize values-based procurement practices, from approving budgets to allocating personnel resources towards sourcing and preparing local, sustainably-grown, seasonal ingredients. On-site champions are instrumental promoters within their institutions and key partners for external regional food system proponents.

Farmer Bradley at Oma and Opa Farm

Discussion

The research indicates ample supply and demand to immediately begin bringing more locally-grown fresh produce into larger-volume markets in Central Texas. Producers are very interested in expanding their markets to sell wholesale, and production volumes can satisfy a portion of the existing market as well as support growth. Wholesale buyers place a premium on locally-grown produce and even indicate a willingness to pay higher prices for those premium products.

It is worth noting a few limitations of this supply and demand. The Producer Survey was completed by 63 growers within a 400-mile radius of Austin, which is a fraction of the total number of growers in that same area. In addition, 37% of respondents reported less than $25,000 in annual gross revenue. While these very small farms may not be appropriate for wholesale markets, they provide insight into the hurdles small farms face when considering wholesale markets. Results of the LFPP Buyer Survey were heavily weighted to school districts, which represented 17 out of the 24 respondents. This is noteworthy since school districts operate under a unique set of Federally-regulated procurement standards and school meal cost reimbursements. Non-school district institutional buyers may be better positioned to find common ground with small to mid-sized farmers.

There is enough common ground for producers and buyers to come together for further discussion.

The following takeaways have been distilled from the findings enumerated above:

1. Producers and buyers line up on a variety of factors. There is enough common ground for producers and buyers to come together for further discussion.
    a. Producers are interested in diversifying to wholesale outlets and there is growing interest and unmet demand among institutional buyers for local food, although there isn't one generally definition for "local."
    b. Most respondents to the producer survey indicated sustainable growing practices, yet were not certified. Buyers place a higher importance on values differentiated products that are "local" and "sustainable," and don't necessarily require third party certifications to verify those growing practices.
    c. Producers expressed the need for marketing support in order to better communicate the unique values proposition of local, sustainably-grown food. Buyers indicate the desire to better understand the farm story of differentiated local and sustainable food options. This win-win could be accomplished through a locally-oriented distributor, a value chain coordinator or a social broker.
2. The overarching barriers to transaction on the buyer side are:
    a. Price. The relationship between supply and demand meets at price.
    b. Inconsistency. Local produce is not available year-round, and quantity of product available can fluctuate drastically.
    c. Difficulty sourcing. Most broadline distributors do not carry a robust local, sustainable, premium product line.
3. Aggregation is necessary. In order to consistently provide reliable volumes and quantity of fresh produce, growers will need to aggregate their volumes to satisfy large wholesale orders. Aggregation across multiple farms will also mitigate the impact that an unexpected crop failure on one farm could have on ability to make deliveries. Lastly, institutional buyers are accustomed to working with 2-3 distributor vendors and an aggregator would just be one more account, instead of 30 individual farmer accounts.

4. Challenges persist. The food hub will need to either provide the following services for producers and buyers, or partner with service-oriented organizations in order to meet these needs.
    a. Wholesale readiness. Producers need wholesale readiness support in order to meet food safety standards and prepare to scale-up for consistent production. Producers also need assistance converting number of acres or number of plants into cases of produce harvested, since that is a common purchase unit used by buyers.
    b. Business and financial assistance. Producers revealed that it's difficult to track production costs and, thus, determine accurate prices. Business and financial consultations can provide much needed technical assistance to accurately price each product grown at varying volumes and across different sales channels. Also, when farm businesses generate profit, they then have the ability to access capital necessary for growth.
    c. Coordinated crop planning. There needs to be a plan for how multiple small producers can aggregate yields in order to meet large volume buyer needs.
    d. Targeted marketing. It is important to take the time to identify existing and develop new pockets of institutional demand where buyers are willing and able to pay premium prices for values differentiated produce. It is also important to cultivate relationships with institutional champions to carry the message internally and communicate programmatic success.
    e. Institutional capacity building. Beyond interest, buyers need support to operationalize local procurement. This includes education about what produce is available, and when, as well as assistance writing detailed and accurate produce specifications.

There needs to be a plan for how multiple small producers can aggregate yields in order to meet large volume buyer needs.

5. Start small and build incrementally in order to achieve sustained impact. A delicate balance is required to make local, sustainable food supply and institutional wholesale demand a right-sized economy, especially as producers and institutions scale-up capacity. The right people need to be at the table to ask the right questions and ultimately exhibit the ability to make commitments.

Oma and Opa Farm beets

LANDSCAPE ANALYSIS

Competitive Analysis

Central Texas is home to various organizations, businesses, and other assets that contribute to and impact the intermediary supply chain. The project team assessed the current landscape of intermediary supply chain players to understand strengths, weaknesses, opportunities and potential threats.

Table 9 identifies supply chain intermediaries that serve Central Texas markets. In addition to online research, the project team identified and interviewed 11 stakeholders that operate in the intermediary supply chain, including large scale traditional distributers, hyper-local micro aggregators, burgeoning technology solution businesses, and one former hub. The majority of businesses interviewed have an operational focus on local products. Two of the businesses interviewed operate more traditional distribution models, one of which has a line of local products.

It is clear that there are a few unique entities aligned with the mission and values shared by the project team, and three of these organizations are described in this section in brief case studies. Specifically, these operations work almost exclusively with diversified, local farms. The project team acknowledges the great strides these entities have made in order to bring local food to a wider audience and market. These successful models include for-profit homegrown businesses and successful non-profit national players; and while they may be incorporated differently they are united in their ability to see the opportunity in this regional food system.

It is clear that there are a few unique entities aligned with the mission and values shared by the project team, and three of these organizations are described in this section in brief case studies.

Table 9: Central Texas food supply chain intermediaries

Value-adding, local food intermediaries selling to Central Texas markets		Broadline distributors	Others acting as broker/sales into greater Austin	Tech solutions
B. Catalani Produce	Hardies	Ben E Keith	Johnson's Backyard Garden (JBG)	Big Wheelbarrow*
Big State Produce	Imperfect Produce	Freshpoint/Sysco		Veggie Vinder*
Brothers	Lettuce	Labatt Food Service		
Cawoods	Nicho Produce	US Foods		
Central TX Farmers Coop	River City Produce			
Common Market	Segovia			
Farmhouse Delivery	Unifresh			
Farm to Table	Yard to Market			
Fernandez Produce				

*Have plans to serve, but not currently serving, the Central Texas market.

Intermediary Characteristics

The first three findings below are general findings:

MARKETS SERVED

Appendix G identifies markets served by various intermediaries. However, the volume of local product that each moves into these markets varies greatly and is a small percentage of the total product brought to the market. For example, one business interviewed sells $800 a week during high season while another business reports over $2.5 million in local produce sales a year. Intermediaries that were interviewed recognize that the institutional demand greatly outweighs the current distribution of local product.

Additionally, there is hope for collaborative work between intermediaries in order to meet demand, instead of a traditional competitive field.

Additional resource-intensive services are provided on a small-scale, such as farmer education opportunities, forecasting, crop planning, light processing, packaging and repacking, and improving food access.

SERVICES

In looking at the services Central Texas intermediaries offered, the project team assessed services for producers, operational services and community services. (See Appendix H for a list of services studied.) Additionally, the team considered services offered by support organizations that impact the work of intermediary supply chain players and mitigate barriers for producers to enter wholesale markets.

The majority of services offered by intermediaries focus on aggregation, distribution and marketing, with some farmer-facing services such as on-farm pickup and wholesale readiness support. Additional resource-intensive services are provided on a small-scale, such as farmer education opportunities, forecasting, crop planning, light processing, packaging and repacking, and improving food access.

VALUES AND CERTIFICATIONS

While some intermediaries include sourcing sustainably-grown produce as a company value, none require their producers to be certified organic. "Local" was often reported as a value as well, yet defined differently across businesses. A radius of 150 miles is commonly used, while other businesses

FARMHOUSE DELIVERY

Location: Austin, Texas

Launched: 2009

Markets: Austin, San Antonio, Houston, Dallas, Ft. Worth

Farmhouse Delivery launched in 2009 as a delivery service bringing the farmers' market to customers' door-steps. Austin residents signed up for a subscription for a multi-farm share of produce with the ability to add on additional local produce, meat, dairy and grocery items weekly. In 2016, Farmhouse acquired two other local hubs, Greenling and Urban Acres, and expanded its offerings by adding 100% locally-sourced meal kits as part of its service. In 2018, Farmhouse was acquired by Farm Project, a California based B-Corp, along with San Antonio-based Trucking Tomato. With the new merger, Farmhouse Delivery added wholesale with Trucking Tomato's infrastructure and now allows customers to order without a subscription.

Farmhouse Delivery works only with Texas producers, and visits them before offering their products to ensure quality. The business champions sustainability by working with producers that are "beyond organic", aiming for zero waste operations, and using reusable packaging. Farmhouse Delivery offers direct to consumer through delivery to homes and workplaces and wholesale, majority restaurant accounts. Customers have access to local produce, meat, dairy, eggs, baked goods, grocery items such as pre-made meals, olive oil, or baby food, and meal kits. All products are Texas-grown or made.

use county or state lines. Among larger intermediaries, "local" is left to the customer to define. One interviewee stated that if the customer wants hyper-local and is willing to pay a premium price, the intermediary will find a way to source it. Some intermediaries (primarily those serving institutions) require producers to hold food safety certifications, such as GAP certification.

Procurement Factors

The next series of findings are factors related specifically to procurement:

PRICE

Intermediaries cite price as the driving factor to procurement decisionmaking. Ultimately, intermediaries follow market demand; therefore, if the market is willing to pay a premium for a product, then intermediaries are more likely to include that item in their product line. Additionally, big and small intermediary businesses noted the importance of producer relationships. Buyers are more willing to pay a higher price to producers they trust to bring consistent, timely and quality product.

RELATIONSHIPS

In addition to mitigating price differences, strong relationships can influence other business decisions. One interviewee recalled a time they provided capital for seeds to a trusted farmer in order to fulfill a future large order. In turn, the intermediary received a lower price when the field was ready. Another spoke about crop planning with trusted farms in order to coordinate production to meet demand. While hard to quantify, these trusted relationship can mitigate risks in the supply chain from farm to intermediary.

COMMON MARKET TEXAS

Location: Houston, Texas

Launched: 2018

Markets: Houston

Common Market Texas is the third location of the mission-based, non-profit distributor. Common Market launched its first brick-and-mortar operation in 2008 in Philadelphia and now serves the greater Mid-Atlantic region with a hub and spoke model. The non-profit also serves the Southeast region with a hub in Georgia.

Common Market Texas currently only holds wholesale accounts; offering produce, meat, grains, eggs and dairy from sustainable producers. All products are farm identified, offering accounts supply chain transparency. At the time of this report, the Texas location is only a few months old, having launched in summer 2018, and works with farms from the entire state of Texas as well as Louisiana. Growers must meet Common Market's values criteria:

- responsible land stewardship
- ensuring safe & fair conditions for farm workers
- providing safe growing, harvesting & processing practices
- reducing or eliminating pesticides
- eliminating hormones and sub-therapeutic antibiotics in livestock
- providing healthy & humane care for livestock
- located within Texas or Louisiana

It is likely that the Houston hub will follow the growth patterns of the other Common Market locations and reach other urban areas in Texas in the next few years, including Austin and San Antonio. While currently Common Market only has wholesale delivery in Texas, the other locations also do a direct-to-consumer multi-farm produce share.

PLANNING

While planning looks different depending on the size of the intermediary, the ability to plan in general was also a procurement factor. A smaller intermediary may visit a farm to discuss seeds, schedules and input costs, whereas larger intermediaries working with large scale farms may have a couple conversations negotiating a discounted price for a large volume of a premium crop. Despite planning, all players equally acknowledge the risk of farming at any size and how that may affect delivery. For example, a mid-size intermediary remembered a time they had a contract to deliver strawberries to a customer for a seasonal promotion. They worked with farms to secure the scale they needed to meet the demand. However, weather destroyed the crop and local alternatives were not available.

CUSTOMER DEMAND

Intermediary businesses procure what the customer requests, including varieties, price and growing region. However, intermediary businesses recognize that while customers may request local product, they are not always ready to pay the premium. As one larger business stated, "Conceptual demand is there but the consumption demand isn't always there, especially in a food service space."

Challenges Working with Local Producers

Intermediaries were asked about their experiences working with local producers; challenges they encounter, strategies they implement, and ways businesses can improve processes in order to work successfully with local producers. The following themes emerged:

COMMUNICATION

Reliable communication is critical in an industry where availability, inventory and pricing fluctuate constantly. Intermediaries who work with local producers cite communication challenges due to limited producer availability. It's usually the same person (or couple of people) farming, delivering and selling product. Farmers also have varying degrees of comfort with and access to certain

FARM TO TABLE

Location: Austin, Texas

Launched: 2008

Markets: Austin MSA, San Antonio and New Braunfels, Houston, Dallas, Waco, Fredericksburg

Farm to Table launched in 2008 in Austin after recognizing the opportunity to serve chefs and restaurants that were interested in local product but unable to find volume and consistency from farmers' market offerings. The business expanded its reach to Dallas wholesale markets in 2015 and to Houston in 2016, with the addition of a 6,000 square foot Houston-based warehouse. Farm to Table's relationships with local chains such as Tacodeli and Kerby Lane supported its expansion into new cities. In addition to restaurant chains, Farm to Table holds accounts with high end "farm to table" restaurants and has worked with institutions from hospitals to school districts.

Farm to Table now serves all types of wholesale accounts offering Texas produce, meat, dairy, eggs, and some grocery items (grains and rice, olive oil, beverages). The for-profit business partners with Texas producers that "utilize sustainable agriculture and ranching methods to produce the highest quality, most flavorful product found on the market". Producers are required to be one day's drive from Austin

technological communications. Intermediaries spoke about local small farms underuse of online ordering systems, email and other technology. It is not uncommon for intermediaries to rely heavily on phone calls in order to get all the details about products being harvested.

CONSISTENCY AND QUALITY

When farms do not have the scale, produce can vary in size and quality within a single order and from order to order. Institutional and retail markets require and expect product to be a certain size, and when individual items within an order do not meet specifications, it can lead to rejection of entire deliveries. This is unsustainable for the intermediary business and for the producers. For intermediaries only sourcing local product, consistency becomes a more critical issue considering seasonality and weather disruptions. Additionally, intermediaries find that small local farms have more difficulty forecasting, thus leading to inconsistent volumes.

FOOD SAFETY

Food safety certifications were mentioned in every conversation as a critical barrier to working with local producers. Larger intermediaries ask farmers to be GAP certified, and Food Safety Modernization Act (FSMA) certification is a looming concern. Small farms are less likely to hold food safety certifications, and while some intermediaries may work with producers to acquire the certifications, others state it is a "nonstarter". When intermediaries include minimal processing as part of their business, food safety certifications become even more important.

SCALE

Even as aggregators, intermediaries still require a certain volume of production in order to onboard a new vendor. Intermediaries currently find that there is a lack of mid-sized farms growing at a wholesale scale in Central Texas.

Intermediaries currently find that there is a lack of mid-sized farms growing at a wholesale scale in Central Texas.

Strengths and Weaknesses

Our region's intermediary supply chain thrives in certain aspects. Strengths the project team identified include:

PREMIUM MARKETS

Current intermediaries have found success in targeting markets both willing and able to pay premiums for local products. Multi-farm CSAs and grocery delivery services use values-based marketing to pass higher premiums directly to the consumer. Intermediaries have also found success in selling local product to restaurants, another market that can use values-based marketing to more easily pass along higher premiums directly to customers.

INCREASING DEMAND

Local and hyper-local food has become a mainstream trend across the United State. A 2015 report from market the research firm Packaged Facts estimated that local foods generated over $12 billion in sales in 2014 and predicts that will grow to $20 billion in 2019. Local food demand is particularly thriving in Austin and San Antonio, with farm-to-table restaurants on the rise, direct-to-consumer access points increasing, and consumers becoming more educated and engaged. Traditional intermediaries also report receiving more requests for local product from institutional and food service customers.

Central Texas carrots

SUPPORT ASSETS

Central Texas is home to various non-profits, governmental agencies and for profit businesses with programming that supports local food and the intermediary supply chain. As the network of food systems organizations strengthens, there is opportunity for more collaboration in the intermediary supply chain advancement.

The project team identified weaknesses as well within the intermediary supply chain, some specific to local food and other more general challenges.

WORKING WITH LOCAL PRODUCERS

As discussed above, intermediaries face many resource-intensive challenges when working with local producers. Consequently, most intermediaries purchase little to no product from small to mid-sized producers. As the Supply Analysis illustrates, these local producers are interested in entering wholesale markets, however only 36% of respondents are selling an average 11% of their total sales to wholesale markets. Barriers to enter the wholesale market for small to mid-sized, local producers are high, and the intermediary supply chain currently lacks the capacity to help producers overcome these barriers.

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PRICE

Institutional markets (food service companies, schools, hospitals, universities) are price sensitive and local products often carry a premium. While there is conceptual interest from these markets, intermediaries have not been able to bridge the price gap or market the value of "local" to justify the premium prices. This price gap limits intermediaries' ability to offer local product to their institutional customers (if they serve them at all).

PLANNING CAPACITY

Institutional markets plan menus months in advance and in some situations have menus planned for the entire year. In order to meet customer expectations, intermediaries need to also plan with their producers. This can be difficult due to the volatility of farming. It is also time intensive for all parties. The planning process is more challenging with smaller producers who may have greater difficultly pricing product and forecasting due to shortage in labor and a general lack of scale.

New Leaf Agriculture, a social enterprise of Multicultural Refugee Coalition

TRANSPORTATION

Transportation is difficult, especially with heavy city traffic. First and last mile delivery are specifically challenging. Refrigerated trucks are also a significant capital investment, and truck maintenance and labor for delivery are a costly ongoing expense.

COLD STORAGE CAPACITY

There is limited cold storage space on-farm, which constrains the ability of producers to serve wholesale markets. While most producers have coolers on site, the amount of space is limited and they don't often have the ability to segment into different temperature zones. Additionally, there is a lack of available existing commercial cold storage space for new or expanding intermediary businesses.

External Environment

National Policies and Initiatives

FOOD SAFETY MODERNIZATION ACT

The Food Safety Modernization Act (FSMA) passed in 2010 as a major amendment to the federal Food, Drug & Cosmetic Act. The FDA spent years in the rulemaking process, therefore many of the provisions are just now (2018) coming into effect. Overall, the regulations contain many ambiguous and broadly worded provisions, so the precise impact—both in terms of what is required and what it will cost—is unclear. However, FSMA will affect both growers and intermediaries.

For a food hub, the major provision will be the Hazard Analysis and Risk-based Preventive Controls (HARPC) rule that applies to "facilities." The term "facility" covers any physical location that manufactures, processes, packs, and/or holds any kind of food for human consumption. For food hubs that include a facility, there are several issues to consider:

- FSMA regulations on the food hub itself;
- FSMA requirements on the suppliers (i.e. the farmers), both the direct requirements and those that flow through due to the supplier verification portions of the HARPC rule; and
- Potential repercussions for the farmers in selling to a distributor.

There are possible exemptions for which a hub may qualify. However, it will depend on factors such as the owner, the customer and/or the size of the business. If the facility is not exempt from FSMA, requirements to meet the HARPC are time and cost intensive. In addition to the implications for the intermediary business itself, the sales of the intermediary could have downstream effects on whether its producers are subject to certain rules that could cost them several thousands of dollars a year in compliance.

FARM TO SCHOOL INITIATIVE

Policymakers recognize the potential impact of introducing more local food into schools. The 2008 Farm Bill allowed schools and child care centers to apply a geographic preference when procuring unprocessed agricultural products. Since then, the proliferation of farm-to-school and farm-to-institution programs has continued and now number in the thousands. Additionally, in 2009 USDA launched their Know Your Farmer, Know Your Food (KYF) initiative to better connect farmers and consumers and strengthen the local and regional food systems that produce and distribute food. Along with the ensuing KYF federal programs, USDA Food and Nutrition Service awards Farm to School Planning, Implementation, and Training grants annually. For the 2018 - 2019 school year, the program awarded 73 grants to serve more than 6,006 schools and 2.8 million students, nearly 66 percent of whom are eligible for free or reduced-price meals. Much of this work focuses on the need for "value chain" development; activities and investments that seek to build relationships along the local and regional food supply chains and bring added value to farmers and communities. Added value may come in the form of increased profitability for farmers; access to source-identified, local, higher quality, and sustainable food among customers; improved environmental outcomes; or economic growth and vitality for communities.

The School Nutrition Association, a national non-profit, recently reported an increase in the amount of locally sourced foods sold in school. Based on the results of their 2017 annual survey, 60% of districts nationwide offer locally sourced fruits and vegetables and more than half include preference for local or regional sourcing in their bid specifications.

FARM BILL

At the time of this writing, the 2018 Farm Bill is currently under negotiation by the conference committee, and it is unclear whether a Farm Bill will be adopted before the end of the year or whether Congress will start the process anew in 2019. There are several programs in the Farm Bill that could provide support for the intermediary and/or its producers, but without clarity on the specific programs and funding that will be included in the final bill, it is difficult to assess its potential impact.

Statewide Initiatives

TEXAS DEPARTMENT OF AGRICULTURE INITIATIVES

- **Texas Farm Fresh**. An initiative of Texas Department of Agriculture (TDA) to increase school and early childcare purchases of Texas-grown food, Texas Farm Fresh "engages young minds to make strong, sustainable connections to local foods, farmers and ranchers." Part of this initiative includes Farm Fresh Fridays, a marketing campaign designed for schools and child care centers to market Texas-grown produce in their cafeterias.
- **FSMA Produce Safety Rule Training**. An initiative of TDA which helps Texas farmers and ranchers meet food safety certification standards required by the Food and Drug Administration. These third party certifications will prove compliance with the Food Safety Modernization Act. TDA has hired a program director and six regional personnel to help train agricultural producers.

NEW AND BEGINNING FARMER EDUCATION

Regionally, Farmshare Austin has a "Farmer Starter" program to provide aspiring farmers with essential skills and training needed to manage a sustainable farming business. Austin Community College opened an Elgin campus in March 2018 to house their sustainable agriculture program. Statewide, University of Texas Rio Grande Valley (UTRGV) has Master of Science degrees in Agriculture, Environmental, and Sustainability Sciences focused on sustainable and organic growing practices, and recently introduced a new B.A. in Agriculture and Food Systems in 2018. Texas State University's Department of Agriculture offers undergraduate and graduate degrees in agriculture, including farm management. Texas State University started its "Boots to Roots" program in 2015 focused on helping veterans, female, and Hispanic students earn agriculture and STEM degrees.

Multiple farming and agriculture-focused conferences are hosted annually, such as the Texas Organic Farmers and Gardeners Conference, Texas Hispanic Farmer and Rancher Conference, Farm and Food Leadership Conference, and Small Producers' Conference. In addition to the organizations and academic institutions already mentioned, the following support organizations also provide ongoing trainings, workshops and on-farm technical assistance to regional and sustainable agricultural producers:

- National Center for Appropriate Technology (NCAT)
- Texas Organic Farmers and Gardeners Association (TOFGA)
- Southern Sustainable Agriculture Working Group (Southern SAWG)

While there is increasing capacity among farm service organizations in Texas, there is much to be done in terms of 1:1 technical assistance for wholesale readiness and scaling, production planning, season extension, sustainable growing practices, and even financial management. What is happening currently is piece-meal, coordinated on an ad-hoc basis and more often than not- totally underfunded.

City and County Initiatives

LOCAL FARM TO SCHOOL INITIATIVES

The study team has worked with the following three school districts in Central Texas to plan and implement Farm to School initiatives.

- Austin ISD has multiple strategies to bring more local food into cafeterias, including marketing campaigns, creative menus, using geographic preference in the bidding process and participating in GFPP (as described above).
- Elgin ISD started its Farm to School program in December 2015 with a USDA Farm to School Planning grant. Elgin Farm to School is part of a district-wide strategy to improve student and family health that also includes school gardens and a "Farm to Kids" after school program. Elgin ISD students will use the planned Elgin Local Food Center (ELF) to provide cooking classes for students and their families and purchase minimally-processed, locally-grown vegetables and fruits.
- North East ISD (in San Antonio) received a Farm to School Implementation grant in 2018-19 to assist with equipment needs and employee training in order to increase student acceptance and consumption of local fruits and vegetables.

There is much to be done in terms of 1:1 technical assistance for wholesale readiness and scaling, production planning, season extension, sustainable growing practices, and even financial management.

GOOD FOOD PURCHASING PROGRAM

The City of Austin's Office of Sustainability is working with the Good Food Purchasing Program (GFPP), a national, metrics-based, flexible framework to help cities and public institutions incorporate good food values into purchasing decisions and leverage demand for local food that is produced sustainably. Three major institutions in Austin have joined the effort to improve purchasing in five core values: strong local economies, protecting the environment, worker rights, animal welfare, and nutrition.

Table 10: AISD strides towards good food

Value Category	Shift in Purchasing	
	Percent	***Dollars***
Local Economies*	45.66% in Y1→ 46.10% in Y2	Almost $1 million
Environmental Sustainability	10.52% in Y1→11.50% in Y2	$306,474
Animal Welfare	12.75% in Y1→17.75% in Y2	$308,581
Valued Workforce	0.61% in Y1→2.21% in Y2	$156,878
Nutrition	No change	NA

*Local defined as within the state of Texas

1. Austin Independent School District. Baseline and year two assessment complete, as illustrated in Table 10.
2. The University of Texas at Austin. Baseline assessment complete, working on year two assessment.
3. Austin Convention Center. Baseline assessment complete, working on year two assessment.

The GFPP partners continue to encounter common challenges related to sourcing consistent and sufficient supply to meet large, institutional needs. The following barriers to program implementation can inform solutions proposed by this study:

- Institutional staff time dedicated to improving purchasing standards.
- Funding for improving food procurement.
- Knowledge of where to source for better products.
- Lack of farms and supply chain companies with qualifying certifications in the value categories.
- Capacity for aggregation of small/ medium scale farm products.

As of September 2018, Travis County Commissioners approved $125,000 in infrastructure funds for the Walnut Creek Pilot Farm project- a pilot for the County to convert underutilized public land into a farm that provides multiple community benefits.

FOOD AND FARMS INITIATIVE

In May of 2018, Travis County announced its Food and Farm Initiative which identifies three specific strategies to support the regional food system:

1. Preserve and expand farmland in Travis County.
2. Research development of a food hub to support small and mid-sized businesses in Travis County.
3. Reduce barriers to farming and participating in the sustainable food economy.

The Initiative is led by the Economic Development and Strategic Investments and Transportation and Natural Resources-Environmental Quality team. This initiative stresses collaboration between departments, external organizations, and within the community in order to implement strategies.

As of September 2018, Travis County Commissioners approved $125,000 in infrastructure funds for the Walnut Creek Pilot Farm project- a pilot for the County to convert underutilized public land into a farm that provides multiple community benefits. The County will issue the request for proposals for this pilot in early 2019. Additionally, the County is working closely with the City of Austin's Economic Development Department on a market study of food retail locations in Eastern Travis County. Challenges to the Food & Farming Initiative include dedicated funding in the County budget and staff capacity within the County.

Elementary school samping of baba ganoush made with local eggplant

Opportunities and Threats

In addition to the internal strengths of the intermediary supply chain, the project team identified the following opportunities from external assets:

LOCAL GOVERNMENT INITIATIVES

Austin and Travis County have food system initiatives focused on food access, farmland preservation, institutional procurement and job creation. In 2016, San Antonio adopted San Antonio Tomorrow, a sustainability plan which highlights food system strategies so that "All San Antonians benefit from a thriving food system that is accessible, secure, nutritious, and affordable."[xix] Government buy-in provides opportunity for funding and collaborative support for non-profit, for-profit and government food centered efforts.

THRIVING TECHNOLOGY SECTOR

Central Texas' growing tech sector is beginning to innovate within the food sphere (Big Wheelebarrow, Veggie Vinder) to provide virtual coordination and other tech solutions to food system issues. More startup incubators and large tech corporations continue to move to Austin, presenting additional opportunity for investment in the food sphere.

FUNDING AND INVESTMENT

In addition to local governments and tech sectors, funders and investment groups are financially supporting food systems improvements and innovation. Strong philanthropic foundations such as the Michael and Susan Dell Foundation, St. David's Foundation and Kellogg Foundation have funded regional food system initiatives that address health and wellness, and are also encouraging systems-based approaches to lasting social impact. Additionally, the region has garnered interest from national funders such as the USDA, which most recently awarded San Antonio's Northeast School District a Farm to School Implementation grant in 2018. The region is home to impact investing groups, including one specifically focused on food (Foodshed Investors), and startup incubators for food related businesses (Food+City). Grants and impact investments in coordinated strategies and food system infrastructure opens opportunity to build a healthy food environment that reaches new populations and creates lasting change.

Grants and impact investments in coordinated strategies and food system infrastructure opens opportunity to build a healthy food environment that reaches new populations and creates lasting change.

GROWING INTEREST IN FARMING

Along with the growing demand in local food, the region is experiencing an increased interest in farming. This resurgence is being met with multiple beginning farmer educational opportunities. With new farmers come new opportunities to reach markets and achieve triple bottom line outcomes.

While the growing demand for local food is encouraging, there still remain many external threats that create barriers in the intermediary supply chain, including but not limited to:

CORPORATE COMPETITION

The convenience or "on-demand" market economy is also a growing market, and local/regional value chains do not and may never have the infrastructure, capital, or flexibility to compete with the speed and technology of this burgeoning field. In considering this threat and to move forward, stakeholders should ask how can local/regional efforts create and communicate the value of local within the convenience market. Additionally, stakeholders may want to explore how can local and/or regional efforts learn from and leverage national and corporate interest in this market.

LAND EXPENSES

Land in Central Texas is expensive, including warehouse and cold storage facilities. Building new infrastructure is a big capital investment for a new business, especially in a high risk industry with low tolerance for error and slim profit margins.

CLIMATE

Unpredictable and increasingly extreme weather events are a challenge for all agriculture businesses. Small-scale producers with limited resources are particularly vulnerable to these environmental shocks. One major crisis that wipes out 2-3 months of income can completely sink these small businesses. Intermediaries that limit their product to a specific region share a similar risk in that if a weather event or disruption occurs in their region, they do not have an alternative supply.

GLOBAL ECONOMY

In a global economy, customers are accustomed to year-round access to all types and varieties of produce. Issues of seasonality are given little importance in the industrial grocery and food system sphere. In contrast, local and regional systems are subjected to seasonality trends and customer demand of seasonal products.

SWOT Summary

Strengths	**Weaknesses**
What is being done well? *What unique characteristics do existing intermediaries possess?*	*What could be improved?* *Where do existing intermediaries possess fewer resources than needed?*
Reaching premium markets, such as restaurants and direct-to-consumer Increasing demand for local food A network of support assets	Working with/supporting local producers Moving local product into institutional and retail grocery markets Planning with local producers is resource intensive and often unsuccessful Transportation Cold storage capacity, both on-farm and commercially
Opportunities	**Threats**
What external opportunities are open to us? *What trends can be leveraged?*	*What external factors could be harmful?* *What barriers need to be overcome?*
Local and regional government initiatives Thriving tech sector Increasing production/farming interest Interest from Funders and Investors	Corporate competition Land expenses Weather and climate change Global economy

Farmshare Austin Micro-hub Pilot Program – Lessons Learned

Located on a 10-acre certified organic teaching farm, Farmshare Austin's mission is to grow a healthy local food community by teaching new farmers, increasing food access and preserving farmland. Farmshare launched Mobile Markets in Fall 2016 in order increase food access by meeting people where they are. The markets are located in neighborhoods facing economic and geographic barriers to good food. Mobile Markets' product mix includes local/Texas farm produce, local eggs/honey and high quality grocery items like canned beans, olive oil and pasta.

OPERATIONS

Farmshare operates a micro-food hub to source for the Mobile Markets. The Mobile Markets' micro-food hub sources from Texas farmers who set their own prices. The Mobile Markets then sell these items at wholesale prices to the customer, even subsidizing some items, to align the prices with grocery store prices. Weekly procurement is dynamic and takes into account factors including seasonal availability, organic versus 'chemical free' versus conventional, hyper-local versus Texas-wide, variety, delivery schedules, customer demand and price. Procurement takes five hours (.125 FTE) per week (ordering = 2 hrs, pickups and deliveries = 2hrs, sorting = 1 hr). In addition to procuring from Farmshare's farm and a handful of regional producers, the micro-hub purchases from Farm to Table, a statewide wholesale produce distributor. This relationship has allowed the micro-hub to include avocados and limes from the Rio Grande Valley, blueberries from East Texas and additional varieties in their product mix.

The Mobile Market Manager receives weekly availability price lists from their regular vendors as well as their own farm. Most communication happens via e-mail with occasional phone calls if an issue arises. Deliveries are received from some farms, while other farms require pick-up from Farmshare. If product is unavailable to source directly from local farmers, then it is ordered from Farm to Table and picked up from the distributor. Eggs and honey orders are made every other week and pick-ups are on the farm or at a Farmers' Market, respectively. Shelf-stable goods are picked up from Wheatsville, a local co-op, on a monthly basis. Payment is made to farmers and Wheatsville immediately and on a weekly automatic payment system to the statewide distributor.

Because the Mobile Market program sells produce at reduced prices that require substantial outside funding to maintain viability, the micro-food hub is not a model for a food hub business plan. However, many of the challenges and successes during the first two years of operation can inform the processes and partnerships in the creation of a food hub in Central Texas:

CHALLENGES

Throughout development, Farmshare has encountered challenges including:

- Identifying wholesale ready farms
- Finding variety that meets customer demand due to regional and seasonal limitations (especially between July and early November)
- Working with larger distributors. For example, the first distributor Farmshare worked with—national distributor with a Texas house—regularly substituted non-Texas produce when the produce was unavailable.

Additionally, it is important to note that the focus of the micro-hub in this pilot phase is not to be profitable, but rather to minimize losses. Moving forward, to increase profit and reduce loss, Farmshare will explore the option of an alternative pricing model that charges customers with the means to pay full retail price.

SUCCESSES

The micro hub has been a large part of the success of the Mobile Markets. Through Farmshare's relationship with Farm to Table and other local farms, the variety of the produce that can be sold through these markets has increased. Eighty-eight percent of surveyed customers in the spring of 2017 stated that they were either Satisfied or Very Satisfied with the variety. The top five most popular items (measured by number of purchases made) in the first year (September 2016- August 2017) were carrots, tomatoes, sweet potatoes, beets and green beans. The top five most popular items in the second year (September 2017- August 2018) were oranges, tomatoes, carrots, grapefruit and corn.

CONCLUSION

Farmshare identified the following lessons learned from their pilot micro-hub project:

- Customers of all income levels value Texas-grown produce.
- In order to have a successful food hub in Central Texas, produce must be procured beyond the five-county area in order to meet market demand.
- Strong relationships with existing wholesale farmers are crucial to launching a food hub.

Building a hoop house at Farmshare Austin

Discussion

Intermediaries recognize the current institutional demand for local product surpasses the current distribution of local produce in Central Texas. As the current institutional demand continues to grow, it creates opportunities for new enterprises and initiatives. Interviewees voiced a desire and a need for collaboration amongst stakeholders in order to accomplish the goal of moving local food from farm to consumer. While intermediaries attested that "there is room for everyone," they also recognized the tendency of regional food system players to be competitive and view the market as "a fixed pie, or zero-sum game." More encouragingly, however, collaboration and support was seen as key to overcoming many of the challenges discussed. Additionally, recent pilot project successes and increasing funder interest in food system innovation for impact places Central Texas in an ideal position for intermediary supply chain projects.

Despite opportunities and optimism in the landscape, Central Texas still faces potentially unchangeable and/or uncontrollable factors as they pose real threats to new and existing production and distribution channels. Additionally, the risk associated with agriculture will always be a larger risk to those businesses bound by size, geography, and resources. These threats must be assessed for risk when considering new projects.

The project team acknowledges the limitations of this landscape analysis. The characteristics of the intermediary businesses and non-profits interviewed varied greatly, and while some questions elicited similar responses, other questions received unique and situational responses. Although the analysis attempted to take this into account when identifying themes, there is potential for error. Additionally, mapping the food system in Central Texas includes dozens of organizations, and asset mapping best practices includes a community-based approach, whereas this study did not have the resources or time to complete. Without the community's input, the mapping is limited in scope. The mapping is also based on current business operations as known by the project team, however small businesses are nimble and can change strategies and target markets quickly that could end up disrupting the whole food system. The project team acknowledges that the policy landscape is shifting constantly, and the quick overview included in this report is limited. For example, NAFTA is being discussed at the national level and any shift in policy could dramatically impact Texas agriculture and its overall food system.

The following takeaways have been distilled from research on the Landscape of the intermediary supply chain:

- There are numerous assets operating in and supporting the intermediary supply chain with diverse and unique scale, commitment to local and capacity for providing services. However, taken together, the existing assets neither reach all producers nor satisfy existing market demand.
- Intermediaries with a commitment to purchasing local need to source from a geographically diverse set of producers in order to maintain a robust product mix across seasons and to mitigate unpredictable, on-farm risks such as extreme weather events and crop failure.
- Scale—of product, of vendors and of customers—is critical to connect local farms to intermediary players and, ultimately, to institutional and retail markets.

- Greater collaboration between private, public, and not for profit entities is essential for systems-wide change. Farmers face increasing pressure from population growth and skyrocketing land prices, as well as increasing unpredictable weather events. National and State policies need to do a better job of protecting our agricultural assets. In addition, Regional agricultural service providers will need to work together to develop clear, measurable goals to mitigate these threats, identify specific activities to meet these goals and plan synergistic execution.

B5 Farm

CONCLUSIONS AND RECOMMENDATIONS

This study set out to understand the opportunities and barriers Central Texas farmers face in scaling up to meet demand for large-volume wholesale markets in Austin and San Antonio, and build on healthy food access initiatives in Austin. We hypothesized that most small to mid-sized farmers in Texas need physical aggregation and distribution infrastructure in order to sell to larger volume markets that serve diverse communities. Research questions were formulated to test this hypothesis. The results illuminated multiple pain points in the supply chain which need to be addressed in order to enhance the sophistication of our regional food system and ultimately safeguard its resilience.

Research question 1:
Does Central Texas need something new or additional to bring more local, sustainably-grown fresh produce into the marketplace in order to strengthen the viability of regional producers and improve consumer access to healthy, fresh food?

Answer: Yes

Research question 2:
If yes, then what does that something new or additional look like?

Answer:
There are multiple assets that need to be built and/or strengthened in order to bring more local, sustainably-grown fresh produce into the marketplace.

Physical aggregation is necessary for small to mid-sized producers to be able to enter into larger-volume markets. The competitive analysis highlights existing intermediaries that could move into this space more quickly than endeavoring to build a new "brick-and-mortar" facility. Common Market Texas and Farmhouse Delivery are two such intermediaries with the infrastructural capacity and mission-driven commitment to aggregate local, sustainably-grown food and distribute into wholesale markets. The project team then identified persistent barriers at the farm-level and at the wholesale buyer level. Key among these barriers are determining reasonable and competitive prices, producer wholesale readiness and institutional capacity building.

The third research question—"Are the project team's proposed actions feasible, and under what conditions?"—will be addressed in the subsequent Implementation Plans for the Recommended Actions.

Chickamaw Ranch farm dog

Recommendations

The project team recommends moving forward with the following activities in order to overcome persistent barriers to a robust, sophisticated regional food system. This is our assessment and some of these things are already happening or are planned to happen. The actions have been prioritized based on urgency, impact and feasibility. Priority recommendations are the five on this page, also highlighted in the chart on page 43.

1. **Provide business management and financial consultations for producers *(Immediate)***

Farms are businesses, and farmers are business owners. As such, proper business management and bookkeeping are vital determinants of farm success. These skills are hard to learn "on the job" and farmers would greatly benefit from business and financial advisement and consultation. An established profit model with sales projections allows farmers to understand price differentiation across products and adjust those prices across different sales channels. When businesses generate profit, they then have the ability to access capital necessary for growth. This initiative is one that could be led by a producer-oriented non-profit in partnership with professional business consultants. Ideally, this work needs to embedded in all projects that have to do with strengthening marketplace transactions for producers, and must be done with regional collaboration to ensure gaps are filled and services are rendered

2. **Build Elgin Local Food center produce processing center *(Near Term)***

The Elgin Local Food Center (ELF) will be a 10,000 square foot processing and education center located in downtown Elgin, Texas 25 miles east of Austin on a major highway. The ELF services will include: (i) minimal produce processing and copacking for schools, (ii) storage (warm, cold, freezer), (iii) business/workforce development, (iv) shared use commercial kitchen and (v) community health education. The ELF is in the fundraising and final design stages in early 2019 and, once funded, construction is expected to begin in late 2019. The City of Elgin Economic Development Corporation has committed $800,000 toward the $2.3 million cost and the Elgin City Council has committed the land in downtown. Additional funds are required to begin construction and operation. The ELF will be owned and operated by the non-profit Texas Center for Local Food and its partners.

3. **Matchmaking between producers and market accounts *(Immediate)***

Social brokering (or "matchmaking" as it is known in value chain coordination) would allow a third party, most likely a non-profit, to put in the time to facilitate communication and connections between institutional buyers and producers. As identified in Health Care Without Harm's 2014 Farm Fresh Healthcare Project pilot, the broker is a critical piece to start farm-to-institution relationships.[xix] Value chain matchmakers or social brokers can be strategic allies to a locally-focused food hub. These experts can identify pockets of institutional demand where buyers are willing and able to pay premium prices for values-differentiated produce, and help build institutional capacity for local procurement. These facilitators may also recruit producers and support coordinated crop planning to meet institutional product, volume and quality demand.

4. **Assist producers to become wholesale ready *(Immediate)***

In addition to providing business management and financial assistance, small to mid-sized farms also need operational assistance to become wholesale ready. Food hubs and producer-focused service providers often help producers with skills such as production planning and scheduling, season extension, post-harvest product handling, on-site storage and refrigeration and food safety training and pre-certification preparation. These approaches to maximize production potential and mitigate on-farm losses at the individual farm level are paramount to achieving volume and consistency. The expertise exists within the region; however, leadership is needed to strategically coordinate efforts and funding is needed to expand and reach more producers.

5. **Establish Micro-aggregation nodes *(Immediate)***

Micro-aggregation projects can be more nimble and adaptable in the first few years of operation. They might be a breeding ground for growth into a larger logistical business, if the market opportunity presents itself. Or they might become the spoke of a larger "hub and spoke" model, if an opportunity to partner with an existing intermediary is presented. Instead of creating an entirely new entity that requires large capital investment, this strategy would build on existing infrastructure (e.g. Farmers Markets), processes and producer relationships. The project team anticipates a micro-aggregation node in Central Texas will source primarily from farmers in the 23-county Central Texas region. Strategic collaborations and partnerships that connect points across the state could open opportunity to extend value chains throughout Texas markets.

6. **Facilitate land access for agricultural producers *(Near Term)***

   Land is often the number one limiting factor to both starting and scaling up a farm business. Barriers to land access include 1) finding available land with favorable growing conditions that is a reasonable distance from major markets and 2) having the means to pay for land amidst sky-rocketing property values. A successful land access strategy will include multiple initiatives that leverage existing assets. One approach is to develop a Texas Land Link program to connect landowners and agricultural producers and facilitate land lease agreements or land ownership transfers. Another complimentary approach is to recruit land trusts that are willing and able to hold the development rights for smaller agricultural parcels in order to ensure long-term farmland conservation and accessibility. An additional approach is to encourage Central Texas municipalities to explore ways to allow food production on publicly-owned land.[xxi]

7. **Develop a group purchasing or equipment share for producers *(Near Term)***

   An equipment share or group purchasing collective can lessen the burden of up-front costs associated with growth. Large expense items can take a big bite out of a modest operating budget. Increased cost of inputs can also limit a producers' ability to scale quickly. An equipment share could save producers tens of thousands of dollars on an item they may only use a couple of times a year. Group purchasing could provide items such as seed, soil amendments, drip tape and row cover at negotiated prices below retail. Fox example, the City of Austin recently began a citywide organics diversion program which will result in untold amounts of compost. This could be a prime opportunity for a social benefit business or mission-driven non-profit to start a group purchasing initiative.

8. **Assist producers who are interested in transitioning to regenerative agricultural practices *(Near Term)***

   Food hubs exist to bring a unique values proposition into the marketplace. Most often, product differentiation focuses on the sale of locally and sustainably-grown and raised, source-identified agricultural products to customers who will pay a premium price for this differentiated product. As demand increases, agricultural production will need to shift in order to incorporate more conservation and regenerative methods. When a food hub can market its products as verifiably sustainable or regenerative or certified organic, then that hub has achieved a competitive advantage. An example of such a food hub with its own ecolabel is Red Tomato in Massachusetts (www.redtomato.org/eco/).

9. **Research the potential of a food industry cluster *(Long Term)***

   In general, industry clusters are groups of geographically-concentrated industries that are related by "skill, technology, supply, demand, and/or other linkages." Clusters leverage existing assets and unique characteristics of a region in order to create efficiencies within the industry and drive economic opportunity for the region.[xxii] Research shows that clusters create opportunity for faster innovation within industries and spur new businesses not only within the industry cluster but also enhance growth in other industries within the region.[xxiii] Sustainable food industry clusters can have additional environmental and social impacts, such as reducing food waste and increasing food access. Cooperation among businesses is key for cluster success.

   This study highlights some of the agriculture assets within Central Texas that could potentially be part of a food cluster initiative. However, further research is needed to identify the assets, resources, and industries that are unique to the region and that would give the cluster a competitive advantage. Assets include agriculture production (beyond fruit and vegetable production such as beef, dairy, eggs, grain etc.), food and beverage manufacturing, and support infrastructure and distribution as well as potential intersecting industries that are unique to the region. For example, Vermont has a successful Sustainable Food Cluster which credits its success not only to its history of family-owned and operated farms, but also to its arts culture.[xxiv] Further research could also include a regional analysis of the labor force and potential for workforce development which could alleviate some of the labor pains experienced in the current value chain.

10. **Support and outreach for Federal farm programs *(Immediate)***

- **Risk Management Education**: Diversified farms are often unaware of risk mitigation best practices or struggle to find crop insurance policies that fit their farm's needs. As a farm business scales to meet wholesale demand, the value of that farm's inventory and infrastructure increases, heightening the need for a comprehensive risk mitigation strategy. Educating agricultural producers, county extension agents, and agricultural lenders on programs like USDA's Whole Farm Revenue Protection will greatly assist diversified fruit and vegetable operations as they scale into wholesale markets.
- **Realize greater efficiency through conservation best-practices**: Existing programs like the Environmental Quality Incentives Program (EQIP) and USDA's Conservation Stewardship Program (CSP) have a proven track records of helping farmers realize greater long-term efficiency by implementing conservation best-practices and season-extending technology. Increasing awareness of these programs and offering growers technical assistance throughout the application and implementation process will increase rates of program participation and success in Central Texas.
- **Price Benchmarking**: The Texas Departments of Agriculture works in tandem with the U.S. Department of Agriculture to collect price data on a variety of agricultural products. These prices direct buyers, sellers, and inform the decisions made by insurance agents and loan officers. More regularly updating retail prices for a basket of specialty crops at Texas farmers markets will help signal prices in this growing industry.

11. **Strengthen the farm labor force so producers can hire qualified labor *(Near Term)***

    Farmers reported that a lack of reliable, qualified labor is one of their biggest barriers to successfully grow and harvest consistent production quantities. Labor shortages extend from qualified field workers to truck drivers and sales associates at markets. Uncertain labor is also a hindrance to producers who are considering scaling-up production to meet greater volume demands. More support is needed to ensure a stable workforce for producers.

Table 12: Set of recommendations

Action	Time-frame	Meets Producer Needs	Meets Buyer Needs	Resources Needed	Lead Entity
Provide business management and financial consultations for producers	Immediate 2019-2020	• Improved business management • Greater ability to track production costs and determine accurate pricing structures	• Greater selection of competitively priced local food	Funding Subject matter expertise	Non-profit For-profit
Build the Elgin Local Food produce processing center	Near Term 2021-2023	• Greater ability to sell seconds and cosmetically imperfect produce • Extend product shelf-life • Make local product wholesale ready	• Convenience of minimally processed produce	Funding	Non-profit
Matchmaking between producers and market accounts	Immediate 2019-2020	• Support with Marketing the differentiated value of local, sustainably-grown produce • Greater market predictability/ stability • Improved crop planning • Enhanced ability to scale-up production	• Institutional capacity building • Improved understanding of seasonality and product availability • Menu planning and purchasing support • Price negotiation with producers	Organizational capacity	Non-profit
Assist producers to become wholesale ready	Immediate 2019-2020	• Better prepared to meet food safety requirements • Improved crop planning and yields • Enhanced ability to scale-up production	• Greater selection of locally-grown produce • More consistent product quality • More consistent product quantity	Organizational capacity Funding Policy Subject matter expertise	Non-profit Government
Establish micro-aggregation nodes	Immediate 2019-2020	• Reduced transportation-related expenses • Greater market predictability/ stability	• More consistent product quantity • Greater sourcing options	Funding	Non-profit For-profit
Facilitate land access for agricultural producers	Near Term 2021-2023	• Prevent farmland loss • Abate the rising costs of land	• Greater selection of locally-grown produce • More consistent product quantity	Organizational capacity Policy	Government Non-profit
Develop a group purchasing or equipment share for producers	Near Term 2021-2023	• Reduced farm businesses costs	• Greater selection of competitively priced local food	Organizational capacity	Non-profit Cooperative
Assist producers who are interested in transitioning to regenerative agricultural practices	Near Tem 2021-2023	• Enhanced product differentiation • Ability to secure premium prices for produce	• Greater selection of sustainably-grown produce • More consistent product quantity	Subject matter expertise Funding	Non-profit
Research the potential of a food industry cluster	Long Term 2023-2028	• Improved food system efficiencies • Support with Marketing the differentiated value of local, sustainably-grown produce	• Greater selection of locally-grown produce • More consistent product quality • More consistent product quantity	Funding Subject matter expertise Policy	Government Non-profit For-profit
Support and outreach for Federal farm programs	Immediate 2019-2020	• On-farm risk mitigation • Improved conservation practices • Improved on-farm infrastructure	• More reliable local food supply chain	Policy Organizational capacity	Non-profit Government
Strengthen farm labor force so producers can hire qualified labor	Near Term 2021-2023	• Improved production	• Greater selection of locally-grown food • More consistent product quantity	Policy	Government Non-profit

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Appendices

Appendix A: Glossary

- **Agriculture of the Middle** – defined as small and mid-sized farms and ranches in the United States that are often "in-between marketing channels: they are too small to compete with larger farms, but too large or otherwise unsuited to sell directly to consumers. Most are family-operated farms, where family members work and the farm provides household income. Together, they produce one quarter of farm sales and manage half of the agricultural land in the U.S. Individually, they often struggle to make ends meet."
- **Alamo Area Council of Governments / AACOG / Alamo Area** – 13-county region including San Antonio MSA and surrounding rural counties: Atascosa, Bandera, Bexar, Comal, Frio, Gillespie, Guadalupe, Karnes, Kendall, Kerr, McMullen, Medina and Wilson Counties
- **Capital Area Council of Governments / CAPCOG / Capital Area** – 10-county region including Austin MSA and surrounding rural counties: Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Lee, Llano, Travis and Williamson Counties.
- **Central Texas** – the 23-county region that includes the Capital Area and Alamo Area.
- **Farm Direct sales / Directly Marketed sale** – "A sale made or an operation making a sale using one of the marketing channels that has only one or two stages between the site of production and the end consumer." (USDA)
- **Food Hub** – businesses or organizations that actively manage the aggregation, distribution and marketing of source-identified food products. Food hubs also operate within their own expressed value sets, and these values guide any additional activities that a food hub may undertake. In theory, food hubs may serve to provide much-needed, size-appropriate infrastructure and marketing functions for local food produced by small and midsized producers.
- **Food production sales** – crop production; animal production and aquaculture; soil preparation, planting and cultivating; crop harvesting, primarily by machine; postharvest crop activities (except cotton ginning); farm labor contractors and crew leaders; farm management services; support activities for animal production
- **FSMA** – the FDA Food Safety Modernization Act Produce Safety rule that went into effect January 26, 2016. The rule establishes, for the first time, science-based minimum standards for the safe growing, harvesting, packing, and holding of fruits and vegetables grown for human consumption. Compliance dates have been set on a rolling basis: January 26, 2018 for large farm businesses (3 year average gross sales greater than $500,000), January 28, 2019 for small farm businesses (3 year average gross sales between $250,000 and $500,000) and January 27, 2020 for very small farm businesses (3 year average gross sales less than $250,000)
- **GAP Certified** – Good Agricultural Practices is a voluntary audit that verify that fruits and vegetables are produced, packed, handled and stored as safely as possible to minimize risks of microbial food safety hazards.
- **Prime Farmland** – Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.Small to mid-sized producer = gross annual sales less than $500,000
- **Value added** – a change in the physical state of a product, such as milling wheat into flour or making tomatoes into marinara, in order to extend shelf life, process cosmetically imperfect produce, reach new markets and enhance convenience for customers, to name a few benefits.

- **Values-based Food Chain** – an innovative business model in which agricultural producers, manufacturers, buyers, and other related supply chain actors form collaborative, transparent partnerships that attempt to combine product differentiation strategies with commitment to shared operational values and social mission goals. Unlike traditional corporate marketing approaches, which focus on the superior attributes of a firm's products or services, value chains address customers' desire to promote social improvement. They incorporate social or environmental mission values within the traditional scope of product differentiation strategies, focusing on such issues as:
    - Supporting the local economy;
    - Farmland preservation and viability;
    - Providing humane treatment and animal welfare;
    - Expanding community access to fresh food; and,
    - Demonstrating environmental stewardship.

Appendix B: Producer Survey

1. Welcome! This survey is for Texas producers who grow food for human consumption. Do you grow food for humans to eat?

   Yes No (please scroll to the bottom and click "Done". Thanks!)

2. County where your farm is located.

3. How long have you been farming or ranching?

   <1 year 1-5 years 6-10 years 11-25 years 26 or more years

4. Total farm acres

5. Total acres in row crops (vegetables, herbs and fruits)

6. Total acres in orchard

7. How many more acres would you be willing to put into row crop production if it was the right financial decision for your farm?

8. How interested are you in selling to wholesale markets? Scale from 0 ("Not at all") to 100 ("Very interested")

9. Would you be more or less likely to sell to a wholesale distributor or food hub if a growing agreement or contract were included?

   More likely Less likely Don't know Other (please specify)

10. Estimate your sales by percentage to each market. Use 0 if you don't sell in this market. Must add up to 100.

    Wholesale – Grocers and/or Brokers/Distributors
    Wholesale – Corporate cafeteria, Concessionaires, and Catering
    Wholesale – Schools Pre-K through 12
    Wholesale – Universities
    Wholesale – Hospitals
    Food and/or meal delivery services
    Restaurants
    Direct to consumer – farmers market, farm stand
    Direct to consumer – CSA, Farm-to-Work
    Other

11. What percentage of your gross revenue is in each of these crops? (Must add up to 100%)

    Vegetables
    Fruits
    Herbs
    Meat (cattle, goat, swine, poultry, etc)
    Dairy (eggs, milk, cheese)
    Grains
    Other

12. How would you characterize your growing practices?

    Organic (certified) Organic (not certified) Sustainable Conventional Other (please specify)

13. Is your farm certified organic? Yes No

14. If not certified organic, how likely is it that you will become certified in the next 5 years?

    Very Likely Somewhat Likely Not Very Likely Skip this question, we're already certified organic

15. Number of acres certified organic

16. Are you GAP (Good Agricultural Practices) certified?

    Yes No I don't know what that is Other (please specify)

17. Food hubs can take many forms of organization. Rank your interest in each of the following types of organizations.

18. To fill an order, a hub might aggregate crops from several farms. How do you feel about this (check all that apply)
    Uncomfortable that my farm brand identity might be lost
    Concerned that another farm's lower quality would reflect poorly on my farm
    I would like to be able to reach larger scale buyers by aggregating crops from my farm with others
    I am uneasy that my certified organic products might be mixed with non-certified organic
    I'm ok with it
    Other (please specify)

19. How involved do you think farmers should be in business decisions of a food hub?
    Scale from 0 ("Not at all involved") to 100 ("Very involved")

20. How involved would you like to be in business decisions of a food hub?
    Scale from 0 ("Not at all involved") to 100 ("Very involved")

21. How interested are you in selling to a food hub?
    Scale from 0 ("Not at all interested") to 100 ("Very interested")

22. If you would like more information or a copy of our survey results, please tell us how to contact you. We'll send our report by email.

23. Food hubs in the U.S. serve many kinds of markets. Which of your markets would you NOT want a food hub to serve? Check the boxes for your "Keep your hands off my markets".
    Wholesale – Grocers and/or Brokers/Distributors
    Wholesale – Corporate cafeteria, Concessionaires, and Catering
    Wholesale – Schools Pre-K through 12
    Wholesale – Universities
    Wholesale – Hospitals
    Food and/or meal delivery services
    Restaurants
    Direct to consumer – farmers market, farm stand
    Direct to consumer – CSA, Farm-to-Work
    I don't know
    Other (please specify) _____

24. What is your gross revenue (average of past 3 years; individual responses are confidential)

    Less than $25,000 $25,000-$99,999 $100,000-$249,999 $250,000-$499,999 $500,000-$999,999
    $1,000,000-$4,999,999 $5,000,000 or more I'd rather not provide this information

Appendix C: Focus Group Questions

TOPIC #1: SELLING.

Aside from price, what factors do you consider when choosing sales outlets? (Net income? Can sell all I produce? Location? Travel time and distance?)

If you sell to more than one buyer, how do you determine the mix? (% retail, wholesale, restaurants, etc.)

If you currently sell wholesale, what are the best characteristics of your buyer?

What non-farming responsibilities are the most time consuming? (e.g., marketing, packing, grading?)

What has worked well for you?

What farm support services would increase your ability to sell?

Are you aware of any trends that would affect your sales going forward?

TOPIC #2 PRODUCING.

How well prepared are your field management and production strategies for wholesale sales?

How has your knowledge of costs changed since you started farming? How has that changed what you produce? Would savings on inputs via cost-sharing be significant?

What do you see as barriers to growth? What are the obstacles to reaching your growth potential/goal?

What has worked well for you?

What farm support services would increase your ability to produce?

Are you aware of any trends that would affect your production going forward?

TOPIC #3 PRICING.

How has your knowledge of prices changed since you started farming? Has that changed what you produce and where you sell?

How do you price your products?

What has worked well for you?

Have you received any technical assistance regarding pricing in the last 3 years?

Are you aware of any trends that would affect your pricing going forward?

TOPIC #4 FOOD HUB MODEL – *Depends on participants' knowledge. Will address as time allows.*

Do you have any experience in cooperative models? What does that look like?

What would most want to know about a FH before deciding on a model (LLC, Co-op, etc.)?

How important to you is it that a Food Hub be farmer-directed? Farmer-run? Farmer-managed?

How do you feel about aggregating products from several farms?

What would motivate you to sell to a Food Hub? To NOT sell to a Food Hub?

FINAL QUESTION: *Final question is wrap-up to circle back to meeting objective and capture any ideas not prompted by our specific questions.*

A Food Hub in Central Texas can increase my farm net income without compromising my other goals and values by ?

Appendix D: LFPP Buyer Survey

1. What kind of buyer are you? (Choose the description that fits you best)

   Public School District Private / Charter School College / University Corporate Campus
   Hospital Convenience Store Industry Other (please specify)

2. Are you currently operated by a Food Service Management Company? If Yes, which one?

3. How many fresh produce vendors do you currently work with? 1 2 3 More than 3

4. How often do you talk to a fresh produce provider?
   More than once a week Once a week Once every 2 weeks Once a month Less than once a month

5. Are you currently using advance contracting for your purchases of fresh produce? Yes No Do not know

6. If you are currently contracting your fresh produce, what is the average length of the contract period?
   3 months 6 months 1 year n/a Other (Please specify)

7. How are you currently purchasing produce? Check all that apply.

   Fresh – Unprocessed Fresh - Processed (Peeled, diced, chopped, bagged) Processed – Frozen
   Processed - Canned /Jarred Other (please specify)

8. On average how many types (broccoli, carrots, corn, etc.) of fresh produce do you purchase a month?

   Less than 10 10 to 15 15 to 20 More than 20 Other (Please specify)

9. Has your organization ever in the past made a deliberate effort to purchase local produce?
   Yes No Do not know

10. How does your organization define local?
    Product grown within 100 miles of consumption Product grown within 200 miles of consumption
    Product grown in the State of Texas Other (please specify)

11. Do you currently purchase local produce? Yes No Do not know

12. If you answered yes to question 11, approximately what percentage of your monthly produce food costs are on local purchases?

13. If you answered yes to question 11, please indicate your local produce vendors:

    Directly from individual producer Directly from a producer cooperative Contracted distributors
    Food service management company Other (please specify)

14. How does an emphasis on purchasing local produce align with your company's core values?
    Not at all Somewhat Very much in line Other (Please specify)

15. What price point would you be willing to pay for local produce above current wholesale costs?
    None Less than 5% 5-10% 10-15% More than 15%

16. What would you consider to be a barrier to purchasing local produce? Rank with #1 being the greatest barrier.

    Sourcing / Difficult to locate
    Pricing too high
    Inconsistent availability of product
    Inconsistent year-round quantity of product
    Not meeting packaging / delivery requirements
    Food safety concerns
    Not offered by primary vendors
    Not familiar
    Not Interested
    Other

17. If you have encountered a barrier to purchasing local produce not listed above, please explain below.

18. How would you rate the importance of the following value-added attributes of fresh produce? (Rate each as Very Important, Somewhat Important, or Not Important.)

    Local Organic Sustainable Agricultural Practices Size of Farm (Small to Medium-sized)

19. Do you currently purchase organic produce? Yes No Do not know

20. If you do buy organic produce, approximately what percent of your total produce purchases are organic produce?

21. How would you rate the flexibility of your produce purchasing decisions?

    Not Flexible / Need specific products no matter what

    Limited Flexibility / Can accommodate very occasional substitutions or changes to availability

    Moderately Flexible / Can accommodate seasonal changes to product availability

    Very Flexible / Can alter purchasing decisions on a weekly basis

22. How would you rate your willingness to purchasing seconds or cosmetically imperfect local produce?

    Unwilling Willing Other (Please specify)

23. How important is traceability, i.e. Knowing the farm and farmer from where your produce came to your purchasing decision?

    Very Important Somewhat Important Not Important

24. What food safety certifications do you require of your fresh produce vendors?

    GAP Certification FSMA Compliance Certification Do not know Other (please specify)

25. What are the insurance requirements for your produce vendors? (Please show minimum limits required.)

    General Liability Product Liability Multi-Peril Other

26. Please list your most purchased fresh produce items by either total volume or dollars spent. (List up to 10.)

27. Please add any statement here that might give us more information about your purchases of fresh produce and your willingness to buy more locally-grown product.

Appendix E: Grocery Supply Survey

1. Are you currently using advance contracting for your purchases of fresh produce? Yes No Do not know
2. If you are currently contracting your fresh produce, what is the average length of the contract?

   3 months 6 months 1 year n/a Other (please specify)
3. How does your organization define local?

   Product grown within 100 miles of consumption
   Product grown within 200 miles of consumption
   Product grown in the State of Texas
   Other (please specify)
4. What are the local produce items you most often buy?

   Texas Peaches Texas Watermelon Texas Citrus Texas Sweet Onions Other (please specify)
5. What price point would you be willing to pay for local produce above current wholesale costs?

   None Less than 5% 5-10% 10-15% More than 15%
6. What would you consider to be a barrier to purchasing local produce? Please rank with #1 being the greatest barrier.

   Sourcing / Difficult to locate
   Pricing too high
   Inconsistent availability of product
   Inconsistent year-round quantity of product
   Not meeting packaging / delivery requirements
   Food safety concerns
   Not offered by primary vendors
   Not familiar
   Not Interested
   Other
7. If you have encountered a barrier to purchasing local produce not listed above, please explain below.
8. What is the approximate percentage of your fresh produce purchases that is certified organic product?

   0 to 5% 6-10% 11-15% Other (Please specify)
9. What are your top 5 selling organic fresh produce items?
10. How would you rate your willingness to purchasing seconds or cosmetically imperfect local produce?

    Unwilling Willing Other (Please specify)

11. What food safety certifications do you require of your fresh produce vendors?

    GAP CertificationFSMA Compliance Certification Do not know

    Other (please specify)

12. What are the insurance requirements for your produce vendors? (Please show minimum limits required.)

    General Liability Product Liability Multi-Peril Other

13. Please list your most purchased fresh produce items by either total volume or dollars spent. (List up to 10.)

14. Please add any statement here that might give us more information about your purchases of fresh produce and your willingness to buy more locally-grown product.

Appendix F: Seasonality Assessment

Texas growing region: S=South, E=East, C=Central, W=West, N=North

Product	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Asparagus			S	S,E,C	C,E,N	N,W						
Artichokes			S	S,E,C	S,E,C	C,E,N						
Arugula	S,E	S,E	S,E	S,E,C	E,C	E,N,W	E,N,W	E,W	E,W	E,W,N,C	S,E,C,N	S,E,C
Beets	S,C	S,C	S,C	S,E,C	S,E,C	W	W	W	W,C	W,C,E	S,C,E,W	S,C,W
Blackberrles				C,E	C,E	C,E,N						
Blueberries					C,E	C,E	C,E,N	N				
Broccoll	S,C	S	S	S,E,N	E,N					E,N	ALL	ALL
Brussel Sprouts	S,E	S,E	S,E	S,E,C	S,E,C	ALL	E,C,N,W	C,W	C,W	ALL	ALL	ALL
Cabbage	S,E	S,E	S,E	S,E,C	S,E,C	ALL	E,C,N,W	C,W	C,W	ALL	ALL	ALL
Cantaloupes					S	ALL	ALL	C,E,W	C,E,W	ALL	S,E	S
Carrots	S	S	S	S,E,C	S,E,C	N,W	N,W	W	W	W	W	S
Cauliflower	S,C	S	S	S,E,N	E,N					E,N	ALL	ALL
Collards	S,E	S,E	S,E	S,E,C	E,C	E,N,W	E,N,W	E,W	E,W	E,W,C,N	S,E,C,N	S,E,C
Cucumber				S	S,E	ALL	E,C,N,W	E,C,N,W	E,C,N,W	ALL	S,E,C,N	S
Fennel	S	S	S	S,C,E	S,C,E	N,W	N,W					S
Figs	S	S	S	S,E,C	E,C	E,C,N	N			C,E,N	C,E,S	S
Grapefruits	S	S	S	S	S					S	S	S
Green Beans			S	S,E,C	S,E,C	E,C,N	N,W	N,W	N,W	C,N,W	S,C	S
Honeydews					S	ALL	ALL	C,E,W	C,E,W	ALL	S,E	S
Kale	S,E	S,E	S,E	S,E,C	E,C	E,N,W	E,N,W	E,W	E,W	E,W,C,N	S,E,C,N	S,E,C
Leaf Lettuces	S,E	S,E	S,E	S,E,C	E,C	E,N,W	E,N,W	E,W	E,W	E,W,C,N	S,E,C,N	S,E,C
Leeks	S	S	S,E	S,E,C,N	ALL	C,E,N,W	W	W	W	S,E,N	S,E,N	S,E,N
Mustard Greens	S,E	S,E	S,E	S,E,C	E,C	E,N,W	E,N,W	E,W	E,W	E,W,C,N	S,E,C,N	S,E,C
Onion (Dry)			S	S	S,C,W	S,C,W	C,W,N,E	C,W,N,E	E,W	W		
Onion (Green)	S	S	S,E	S,E,C,N	ALL	C,E,N,W	W	W	W	S,E,N	S,E,N	S,E,N
Oranges	S	S	S	S	S					S	S	S
Parsnips	S,C	S,C	S,C	S,C,E	C	W	W	W	W	C,E,W	C,E,W	S,C,E,W
Peaches				S	S,E	C,E,N	C,E,N,W	C,E,N,W	E,W			
Pear				S	S,E	C,E,N	C,E,N,W	C,E,N,W	E,W			
Pepper (Bell)	S			S	S,E,C	E,C,N	N,W	W	W	ALL	ALL	S,E
Peppers (Hot)	S			S	S,E,C	E,C,N	N,W	W	W	ALL	ALL	S,E
Plums				S	S,E	C,E,N	C,E,N,W	C,E,N,W	E,W			
Pomegranates									C,E	C,E	C,E	
Potatoes (Red)			S	S,C	S,C,E	S,C,E,W	W	W				
Potatoes (White)						C	C	N	N	N,W	W	W
Potatoes (Yukon)						C	C	N	N	N,W	W	W
Pumpkins									C,E	C,E,W,N	C,E,W,N	N,W
Snap Peas	S	S	S,C,E	C,E	C,E,N	N,W				N,W	C,E,S	C,E,S
Snow Peas	S	S	S,C,E	C,E	C,E,N	N,W				N,W	C,E,S	C,E,S
Squash(Yellow)			S	S,C	ALL	C,E,W,N	C,E,W,N	N,W	N,W	C,E,W,N	S,C,E	S
Tomatoes (Cherry)			S	S,C	S,C,E	ALL	N,E,W	N,E,W	N,E,W	E,W	C,S,E	C,S,E
Tomatoes (Slicing)				S	S,C,E	ALL	N,E,W	N,E,W	N,E,W	E,W	C,S,E	C,S,E
Tomatoes (Roma)				S	S,C,E	ALL	N,E,W	N,E,W	N,E,W	E,W	C,S,E	C,S,E
Tomato (Heirloom)				S	S,C,E	ALL	N,E,W	N,E,W	N,E,W	E,W	C,S,E	C,S,E
Spinach	S	S	S	C,E	C,E,N,W	N,W				N,W	ALL	ALL
Sweet Potatoes	E	E	E	E	E			C,E,W	C,E,W	C,E	C,E	C,E
Turnips												
Watermelon (Seed)					S	S,C,E	S,C,E,N	C,E,N,W	C,E,N,W	C,S	S	
Watermelon (Seedless)					S	S,C,E	S,C,E,N	C,E,N,W	C,E,N,W	C,S	S	
Winter Squash	S	S								ALL	ALL	S
Zucchini			S	S,C	ALL	C,E,W,N	C,E,W,N	N,W	N,W	C,E,W,N	S,C,E	S

Appendix G: Central Texas Markets Currently Served by Intermediaries

	Grocery	Restaurants	Hospitals	Corporate Cafeterias	K – 12 School Districts	Universities	Direct-to-Consumer
Farm to Table	x	x		x	x		
Farmhouse Delivery	x						x
Yard to Market		x					x
Central TX Farmers Coop							x
Common Market	x	x	x	x	x	x	x
Hardie's	x	x	x	x	x		
Fresh Point	x		x	x			
JBG	x	x	x		x		x
B.Catalani Produce	x	x	x	x			
River City Produce	x	x	x	x			
Unifresh	x	x	x	x			
Fernandez Produce	x	x	x	x			
Big State Produce	x	x	x	x			
Murphy Tomatoes	x	x	x	x			

Appendix H: USDA Food Hub Operations Infographic