



# CONSIDERATIONS FOR THE TENNESSEE PRODUCE INDUSTRY



# Considerations for the Tennessee Produce Industry

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## Foreword

The following report has been prepared to provide foundational information regarding wholesale marketing opportunities for the produce industry in Tennessee. The structure of the produce industry has experienced significant changes in recent years, and many growers in Tennessee have moved more toward local, direct and retail marketing efforts. Such efforts seem to have created positive market opportunities for smaller-volume growers. However, this has led some to question whether lurking opportunities may also exist for larger, wholesale growers. This report looks at the produce industry from the perspective of possible market and industry opportunities for Tennessee growers with wholesale buyers.

The notion of this type of report developed from numerous discussions and strategy sessions between personnel from the Center for Profitable Agriculture and the Tennessee Department of Agriculture, Market Development division. The report has been completed as part of the Center's "farm-to-market" initiative, which has been funded in part by the Tennessee Department of Agriculture.

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*Rob Holland*

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# Table of Contents

<b>Executive Summary</b> -----	<b>1</b>
<b>Introduction</b> -----	<b>2</b>
Structure of the U.S. fresh produce industry	2
Key questions for produce industry expansion in Tennessee	4
Tennessee produce industry background	5
<b>Tennessee’s Wholesale Produce Industry: Strengths, Opportunities and Barriers</b> -----	<b>8</b>
Strengths	9
Opportunities	12
Barriers	18
<b>Entering the Produce Supply Chain</b> -----	<b>22</b>
What creates difficulty in farm-to-grocery connections?	22
What works with the broker model, and can it be replicated by database programs?	23
What does it take for successful farm-to-school programs?	24
<b>Specific Possibilities for Tennessee</b> -----	<b>26</b>
Are produce auctions the wave of the future for conventional farmers?	26
Do pre-planting contracts remain feasible?	27
Where are the produce wholesale buyers?	28
What is the feasibility of a statewide clearinghouse for products/growers?	30
<b>Conclusion</b> -----	<b>31</b>

# Executive Summary

The structure of the fresh produce industry is distinct from other agricultural commodities such as row crops and livestock. Produce crops are perishable, and producers often control production in different geographic areas to maximize their ability to supply year-round fresh produce. Larger retailers have developed their own fresh produce procurement and distribution systems, often working directly with produce grower-shippers. However, there also still exists a vibrant network of produce wholesalers who are procuring, aggregating and distributing fresh produce for sale into food service and smaller or independent grocers. Close-knit relationships between both produce grower-shippers and procurers exist in both of these supply channels. Such relationships regularly require “face time” between representatives. Commercial produce growers have also used various types of retailer procurement contracts. Food safety concerns have driven fresh produce growers and shippers to be some of the earliest adopters of traceback and food safety technologies in agriculture. Such issues have differentiated those in the fresh produce industry from many other food producers.

Two issues have arguably dominated the fresh produce industry during the past decade: food safety and regional procurement. Local food is no longer a novelty at farmers markets and is now seen as an attractive product attribute by shoppers at mainline groceries. Food safety remains of enormous concern to those in the fresh food industry, including uncertainty in this area around forthcoming FDA regulations for the Food Safety Modernization Act.

According to the Census of Agriculture, the Tennessee produce industry contributed more than \$73 million to the state’s farm cash receipts in 2007. Tennessee has historically been noted for its commercial fresh snap bean, pumpkin, tomato and squash production. However, among major produce crops in Tennessee, only the fresh tomato area has increased since 2007. This report focuses on Tennessee’s wholesale vegetable industry, and will suggest strengths and challenges for expanding Tennessee’s produce industry. A main theme in this report is that while there might be possibilities for procuring more fresh food at the local level (such as farm-to-school and database matching programs), such programs have not been observed to typically generate large amounts of additional income per farm.

Developing and expanding the wholesale produce industry in Tennessee will be contingent on building relationships with existing national players, as well as working with supermarket chains and wholesalers now more interested in saving transportation costs and offering consumers food grown closer to the point of purchase. Observations from the fresh produce industry indicate that produce growers typically develop these kinds of new relationships both by offering a superior product and investing personal capital, both relational and financial, into new opportunities. Numerous opportunities may also exist for Tennessee produce growers to develop smaller-scale, regional supply chains, including those for specialty production such as certified organic crops and niche produce items. Limited data are available regarding the extent to which public investment in produce industry development efforts have been realized in total increases to farm income.

## Structure of the U.S. fresh produce industry

Changes in the fresh produce industry can be well-illustrated by comparing a visit to the supermarket produce section today with a visit 20 years ago. Today's fresh produce shopper at Wal-Mart, Kroger or other national chains has the opportunity to buy multiple fresh-cut fruit items and even different types of store brands, such as certified organic packaged salad mix. Many would have found the idea of store-brand organic salad mixes being offered in U.S. supermarkets laughable 20, or even 10, years ago. Not to mention white-fleshed peaches and nectarines displayed in-season along yellow-fleshed varieties; fingerling potatoes, beside Yukon Gold, as standard fare in the potato bin; and a growing selection of packaged salad mixes, herbs and fresh-cut fruit offered alongside bananas, iceberg lettuce and apples.

*Changes in American consumer tastes and demand, as well as technological changes, have deeply affected the relationship between produce growers, shippers and retailers.*

While other sections of the supermarket reflect changes in food supply chains, no other single sector of the consumer fresh food industry has evolved as much in recent years as the fresh produce industry. **Changes in American consumer tastes and demand, as well as technological changes, have deeply affected the relationship between produce growers, shippers and retailers.** These produce industry changes, occurring mainly in the late 1980s and throughout the 1990s, were summarized in a 2003 USDA report:

Shifts in (fresh produce) consumer demand, technological change in production and marketing, and retail consolidation have altered the traditional market relationships between producers, wholesalers, and retailers. Consumers are eating more fresh produce, purchasing a wider variety year-round, and demanding more convenience, like bagged salads. Information technology has introduced efficiencies throughout the supply chain, reducing production and marketing costs. Retail consolidation has occurred rapidly as large supermarket firms have merged or been acquired. Mass merchandisers and warehouse club retailers are selling an increasing volume of food products with low-price strategies. Fresh fruits and vegetables sold to restaurants, fast-food outlets, and other food service operators have grown to account for more than half of all retail produce sales.<sup>1</sup>

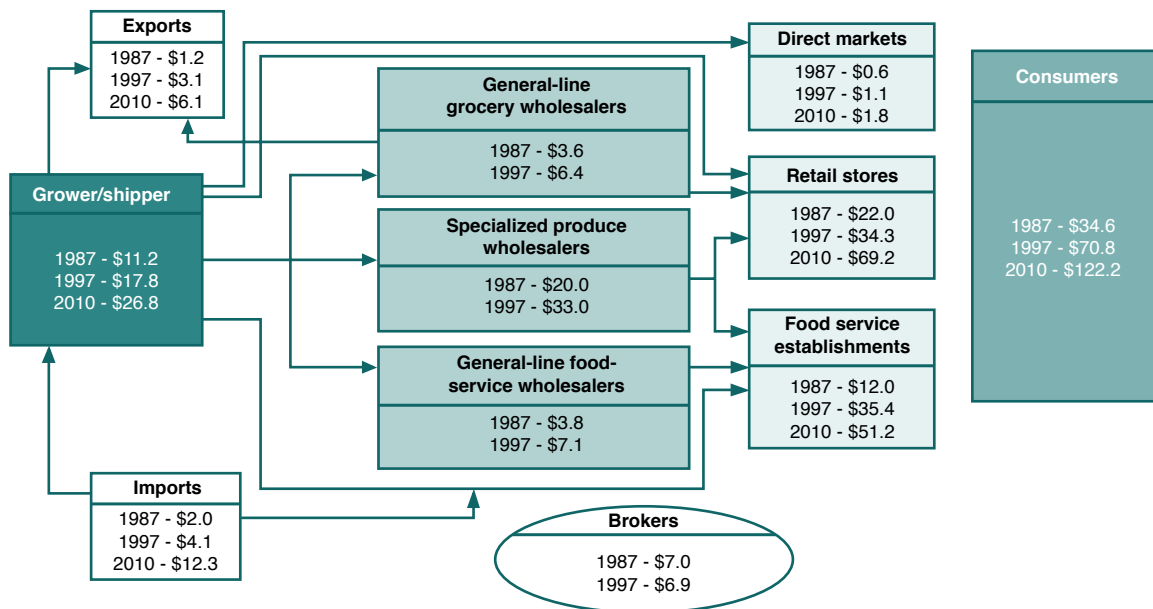
Because of the direct link between produce retailers and growers, changes in consumer demand in the fresh produce industry have had huge impacts on the produce industry supply chain. Thus, even with increased consumer interest in local production, food retailers still must acquire product from producers able to realize production economies of scale to supply retailers at competitive price points. These producers must also be able to provide state-of-the-art information tracking to assuage food safety concerns from both wholesale and retail customers. In addition, demand for organic production methods has become more mainstream and is an expanding segment of food retail on the produce industry supply chain (see graphic on page 3).

<sup>1</sup> Dimitri, Carolyn; Tegene, Ababayehu and Kaufman, Phil R. *U.S. Fresh Produce Markets: Marketing Channels, Trade Practices and Retail Pricing Behavior*. Economic Research Service, USDA. AER Number 825, September 2003.

The technological requirements and strength of producer-retailer relationships in the produce industry make entry into the industry relatively difficult for new producers. Unlike row crop or livestock industries, where producer numbers are still relatively large, fresh produce is characterized by a relatively small number of very large producers controlling production in many different regions or geographic areas. In the produce industry, bargaining power in approaching retailers and wholesalers is acquired by a production entity that is able to offer the longest supply of a fresh, perishable produce product. A blueberry grower, for example, may now control production in California and New Jersey or Michigan, as well as Florida and Chile, in order to provide a year-round supply to a retail customer.

This reality does not downplay the much-publicized growth in supply of local foods. To be sure, recent and widely reported consumer preferences for local production have stimulated the largest retailers to seek sourcing produce closer to a store site. But this shift is also driven by supply chain economies (like high transportation costs), and local producers must still compete with major suppliers of crops, both in and out of local seasons. Furthermore, producers in some parts of the country have advantages in producing certain crops at much lower costs. Idaho's tubers have taken over the potato section because Western producers can simply grow potatoes at far lower costs than Eastern growers, even in traditional production areas like Maine.

### U.S. Fresh Fruit and Vegetable Supply Chain with Estimated Dollar sales



Note: All Values are in \$ billion.

Sources: Census of Wholesale Trade Census of Retail Trade; Blue Book, 1997; mcLaughlin et al., 1998. Sales values for 2010 obtained from: "Fundamental Forces Affecting U.S. Fresh Produce Growers and Marketers," Roberta L. Cook. Choices, 4th Quarter 2011, 26 (4).

## Key questions for produce industry expansion in Tennessee

The national produce industry has dramatically changed in the past two decades. **Supply chain dynamics have changed as larger retailers more frequently deal directly with grower-shippers.** At the same time, the number of products demanded by retailers has increased, reflecting changing consumer tastes.

Technological innovation, both for transportation logistics and food safety concerns, has greatly advanced at the retailer level. There are also different channels for sending fresh produce into the retail market. Large regional/national food retailers may have different requirements and supply channels than smaller regional grocers. Smaller grocers are likely served by produce wholesalers, businesses that group and aggregate produce into larger loads. Such differences also exist within the institutional market, where companies such as SYSCO operate large-scale procurement and distribution arrangements. These arrangements are much different than when a local grower delivers produce directly to a small local restaurant.

*Supply chain dynamics have changed as larger retailers more frequently deal directly with grower-shippers.*

Changes in the produce retail business, combined with the diversity of wholesale produce channels, raise this question: how does a relatively small national player in the fresh produce industry, even a state like Tennessee with a heritage of producing significant wholesale volumes of some fresh produce crops, gain a stronger foothold in the wholesale produce chain?

There are at least four questions crucial to identifying possibilities for Tennessee's produce industry:

- » Are there ways to make inroads into the existing produce supply chain structure, establishing new relationships with current retailers and wholesalers?
- » What effect does "local" have on produce consumption?
- » Could "new" wholesale sources, like farm-to-school and produce auctions, provide small-scale wholesale market outlets to producers wishing to ramp up production?
- » Can a statewide database promote useful linkages between producers interested in supplying produce at the wholesale level and mainline grocery retailers?

Overall, this report will present possibilities for the wholesale produce industry in Tennessee based on these four questions. It is apparent that opportunities do exist to develop smaller wholesale market outlets through well-planned farm-to-school and (perhaps) other wholesale outlets like produce auctions. It also seems that, to date, statewide clearinghouse and database matching programs have shown little to no success in significantly raising overall farm incomes and market access. It also is apparent that the reality of the fresh produce industry's future in Tennessee and similar states is this: for farm income to be substantially increased through marketing more wholesale fruits and vegetables, producers may best be served by 1) investigating alliances and allying themselves with existing grower-shippers OR 2) producing higher-margin, specialty products where they or their region has some natural competitive advantage, a focused research base, or particular production experience.

**It is important to remember that there is no one-size-fits-all way to create produce grower-shipper alliances or develop regionally distinct products.** Successful overall produce industry development efforts will combine strategies to increase large-volume shipments with institutional research and programs designed to promote increased production, consumption and purchasing of fresh produce items. **Due to the multiple wholesale channels available in the fresh produce industry, successful industry development should take a multifaceted approach.**

*Due to the multiple wholesale channels available in the fresh produce industry, successful industry development should take a multifaceted approach.*

## Tennessee produce industry background

Tennessee vegetable production contributed 2.75 percent of the market value of the state's agricultural products in 2007 (\$71.87 million) with fruit production contributing an additional 0.01 percent (\$2.552 million).<sup>2</sup> Despite the market value of vegetables harvested in Tennessee increasing nearly 5 percent between 2002 and 2007, harvested vegetable acreage decreased about 14 percent during the same period. This may indicate trends toward using more direct market channels or an increased focus on production of higher-value crops (Table 1). According to the 2007 Census of Agriculture, the value of agricultural products marketed directly to consumers in Tennessee increased from \$11.23 million in 2002 to \$15.38 million in 2007.<sup>3</sup>

**Table 1. Tennessee Produce Acreage: 1992-2007 and 2010 (estimated)**

	1992	1997	2002	2007	2010**
All Vegetables	36,545	35,644	39,502	34,013	34,877*
Snap beans	11,512	10,126	10,353	9,772	9,600
Sweet corn	2,331	3,217	3,336	3,109	3,200*
Tomatoes			4,327	4,021	4,600
Pumpkins			3,742	2,385	2,500*
Squash			1,256	449	700
All Fruit	6,193	4,427	3,600*	3,610	3,200*
Apples	2,991	2,226	1,627	1,330	800
Peaches	1,926	1,074	734	613	600*

Source: Census of Agriculture, \*\*NASS January 2011 Annual Reports

\*Data estimated due to lack of reporting actual blackberry acres (2002), peaches, pumpkins and sweet corn (2010)

<sup>2</sup>2007 Census of Agriculture, Tennessee, Table 2.

<sup>3</sup>As the majority of this value comes from direct-marketed fruits and vegetables, this indicates an increase in the use of direct market channels for produce crops.



## Vegetable Production Trends

Tomatoes, a high-value vegetable crop often embraced by direct farm marketers, showed the most increase in area. The USDA National Agricultural Statistics Service (NASS) estimated that Tennessee's commercial tomato production in 2010 increased to about 4,600 acres, the highest level in recent years. Tennessee's commercial snap bean acreage, which declined more than 10 percent during the 1990s, saw only a slight decline from 2007 to 2010.

After snap beans and tomatoes, the next most significant commercial summer vegetable acreage in Tennessee comes from sweet corn. Sweet corn area has remained at about 3,200 acres since 1997. Tennessee growers harvested about 700 acres of commercial summer squash in 2010, an increase of about 350 acres over 2007 levels.<sup>4</sup> While this amount of summer squash is regionally significant, it is still a minor amount on the national scale. Tennessee has also produced significant wholesale pumpkin acreage in past years, but the state's pumpkin production area has declined, as pumpkin production grows more targeted toward direct market and local sales.

## Fruit Production Trends

Tennessee's fruit production area declined by 40 percent between 1992 and 2007. This decline has since continued, with only 800 apple acres reported harvested in 2010 compared to 1,330 in 2007 (Table 1). This reflects an amount less than one-third of the apple area harvested in 1997. A similar decline was reported for harvested peach area, with 613 acres harvested in 2007 compared to 1,926 in 1992.

While tree fruit area declined, the 2007 Census reported an increase in small fruit area (grapes and berries) between 2002 and 2007. Much of this increase was due to a 190-acre increase in grape acres. While blueberry and blackberry acres increased between 2002 and 2007, the majority of the acreage for these berry crops had not yet reached full maturity, or bearing age. Nearly 600 acres of blueberries and blackberries were reported planted in 2007, but only about 230 acres were harvested.<sup>5</sup>

Most commercial fruit area in Tennessee is utilized for high-value, direct marketing purposes. For example, Tennessee apple prices in 2010 averaged more than \$0.30 per pound, compared to a national average of \$0.23.<sup>6</sup> Higher average apple prices in a given state typically reflect a concentration of production for direct market or retail, rather than wholesale, market channels.

<sup>4</sup> USDA National Agricultural Statistics Service. *Vegetables 2010 Summary*. January, 2011. Table 31.

<sup>5</sup> 2007 Census of Agriculture, Tennessee, Table 36.

<sup>6</sup> USDA National Agricultural Statistics Service. *Noncitrus Fruits and Nuts 2010 Summary*. January, 2011. Page 16.

## Vegetable Producer Numbers

Commercial wholesale vegetable production in Tennessee, with the exception of pumpkins and sweet corn, has become concentrated among a relatively few large producers. Five farms harvested 60 percent of the total Tennessee vegetable acreage in 2007, according to the Census of Agriculture. During the same year, 15 farms harvested more than half of the state's fresh tomato acreage. This mirrors the trend in national wholesale vegetable production. **While national retailers prefer to deal with grower-shippers and/or produce brokers and wholesalers who can supply large amounts of product both across a well-defined timeframe and according to increasingly stringent product traceability and food safety guidelines, smaller or regional retailers may procure produce from wholesalers purchasing from various sources throughout the year.**

## Product Traceability in the Produce Industry

The terms traceability and traceback refer to the ability to trace food products back to the point of production or manufacture. Because of liability and food safety concerns, having an adequate traceability program is becoming more essential for selling to the country's major retailers, wholesalers and food service purchasers of produce. Adequate traceability measures can also provide the means for identifying possible points of contamination within the supply chain, helping producers improve food safety to respond to ever-present regulatory issues and consumer safety concerns..

Traceability measures commonly used in the produce industry today include many quality assurance (QA) programs. These programs are often designed to ensure that producers are adhering to good agricultural practices (GAP) and good handling practices (GHP) designed and verified to ensure that food is being handled in the safest possible manner to minimize food safety risks. The GAP and GHP standards are defined by USDA Agricultural Marketing Service. Third-party audits of producers can help verify that production is adhering to these standards.<sup>7</sup> Some produce growers also choose to adhere to different standards for the purpose of organic production or production for export.

In addition to most buyers requiring traceability measures, leading produce shippers have quickly recognized the value and marketing potential for providing traceability to consumers. Today, the advance of tracking technology makes it possible for a consumer to use a smartphone to scan a QR (Quick Response) code on an individual fresh or packaged produce item. The QR code may then take the consumer to video of the packing facility or even the actual field in which the product was grown.

While individual producers may not be responsible for all the costs of such traceability initiatives, successful commercial produce grower-shippers do embrace the need to provide transparency and total information to purchasers. Produce industry-sponsored initiatives such as the Produce Traceability Initiative (PTI) continue to promote the responsibility of producers to maintain detailed production information from their own farms (internal traceability) and tracking information for the product between the farm and retail (external traceability). Because of the sometimes unique food safety concerns surrounding fresh produce, traceability and the technology it requires are critical parts of expanding both conventional and organic production and marketing systems.

<sup>7</sup> Third-party inspection came under increased scrutiny in 2011 after food safety issues in Colorado cantaloupes that had been third-party GAP audited. Criticism of third-party inspections as a safety means has included noting that the inspections only verify safe practices during the timeframe of the third-party audit. Improved and emerging traceback technology, being adopted by the produce industry's larger grower-shippers, can document where produce has been at all times in the supply chain and what practices have been used to grow and ship the produce.

# Tennessee's Wholesale Produce Industry: Strengths, Opportunities and Barriers

A complete analysis of opportunities and threats for Tennessee's wholesale produce industry is beyond the scope of this report. For now, a brief list is provided of significant opportunities and barriers compiled from observing and comparing Tennessee relative to the national produce industry.

## Strengths

- » Experience of some larger producers in producing select wholesale crops.
- » Accessibility to major north-south and east-west transportation hubs.
- » Developed state-level Pick Tennessee Products program.

## Opportunities

- » Potential for *smaller growers* to ride the wave of local foods popularity to develop smaller, local wholesale markets.
- » Improvements in season-extension techniques and certified organic/specialty production methods.
- » Increased openness from retailers and wholesalers for sourcing produce crops closer to final retail location.

## Barriers

- » Preference of retailers for grower-shippers and/or produce brokers and wholesalers who can supply large amounts of product both across a well-defined timeframe and according to increasingly stringent product traceability and food safety guidelines.
- » Continued produce industry consolidation.
- » Lack of Tennessee-based, diversified national grower shippers.
- » Lack of specialized, local supply chain infrastructure for organic and highly perishable crops.
- » Ambiguity and uncertainty concerning impacts of food safety regulations, especially impacts upon small- and mid-sized produce growers and wholesalers.

## The Tennessee Wholesale Produce Industry: Strengths

- » Experience of some larger producers in producing a select few wholesale crops.
- » Accessibility to major north-south and east-west transportation hubs.
- » Developed state-level Pick Tennessee Products program.

### *Strength: Reputation for Established, Experienced Producers of Some Major Produce Crops*

A strength for Tennessee's wholesale produce industry expansion may be the presence of established, experienced producers of some major produce crops. It was previously stated that a relatively small number of producers account for large amounts of the production of major crops. Tennessee round green beans and Grainger County tomatoes are two leading examples of significant crops produced by a relatively small producer base.

#### ***Produce industry consolidation***

refers to fewer growers supplying a greater percentage of the national demand for produce crops. Such firms are often referred to as *grower-shippers*, meaning they are both growing and shipping the crops directly to a retailer (rather than selling to a middleman or produce broker).

***Local supply chain infrastructure*** refers to the transportation and facilities necessary for grading and assimilating crops. For example, in large apple or potato production regions, specialized climate-controlled warehouses and cold storage units exist for handling the crop. Such infrastructure leads to lower costs of production and helps guarantee the continuity of the cold chain (relevant to food safety concerns) for many fresh produce crops.

In 2007, for example, the Census of Agriculture reported that 13 farms in Tennessee harvested more than 22,000 acres of the vegetable acreage. This represented more than 65 percent of the total vegetable acreage harvested in Tennessee. These operations were mainly producing tomatoes, squash, snap beans and corn.

The presence of larger commercial growers in Tennessee could create a positive environment for retailers and/or wholesalers to consider purchasing additional amounts of Tennessee wholesale vegetables. More probable is the possibility of smaller producers producing complementary or specialty products that could diversify existing production. Possibilities could include specialty varieties or certified organic production. In such cases, there must be an obvious economic incentive for an existing grower-shipper to partner with new grower-shippers to capitalize on existing marketing relationships. There would also need to be the willingness or the ability on the part of smaller or mid-size growers focused on direct marketing to diversify into niche wholesale markets.

<sup>8</sup> 2007 Census of Agriculture, Table 34.

### ***Strength: Accessibility to Major Transportation Hubs***

The Nashville, Memphis and Knoxville metro areas are crossroads for major north-south and east-west ground transportation. Tennessee boasts major north-south interstate corridors with the presence of I-65, I-75 and I-29. The state also has the longest stretch of I-40 of any state in the nation.<sup>9</sup> In addition to interstate accessibility, Tennessee's state highway system provides ground transportation access into the traditionally major produce production areas, such as 92 and 25E in the traditional tomato production area of Grainger County.

Due to the presence of major east-west and north-south highways, many major retailers have located food distribution centers within Tennessee. These include national retailers such as Wal-Mart and Kroger (Delta Distribution Center, Memphis). Regional chains, most notably Food City, also maintain distribution centers and are reportedly open to purchasing locally grown produce from Tennessee and other growers.<sup>10</sup> Expansion of fresh produce production in Tennessee can take advantage of the state's natural strength in accessibility to transportation infrastructure, focusing development in areas close to major highways.

### ***Strength: Pick Tennessee Products***

State-sponsored marketing campaigns, such as the Pick Tennessee Products program, can appeal to a wide preference among consumers for local food. "Most studies show that consumers would prefer to buy local products," states a well-known report from the agricultural economics literature of the last decade.<sup>11</sup> A 2004 Rutgers study of New Jersey's well-known "Jersey Fresh" program attributed more than \$50 (2003 dollars) generated in economic activity for every dollar spent on New Jersey's promotional program.<sup>12</sup> Giraud (2005) indicates that price premiums for state-sponsored programs may be extended to value-added products made with local fresh ingredients.<sup>13</sup> More recent research from Kentucky and Ohio, published in 2011, indicates consumer willingness to pay more for blackberry jams that are differentiated by the "Kentucky Proud" and "Ohio Proud" labels.<sup>14</sup> Clearly, promotion of local crops and food products can be tied with positive contributions to a state's economy.

A 2011 survey by the UT Vegetable Working Group documented produce grower participation and attitudes toward the Tennessee Farm Fresh and Pick Tennessee Products programs. These are summarized in Table 3 below. Participation in both programs was less than 40 percent of the responding producers. About 75 percent of the surveyed producers participating in Tennessee Farm Fresh perceived the program increasing sales while about half (51 percent) perceived the program helping them access new markets. A similar percentage of producers indicated that Pick Tennessee Products had helped them access new markets. About 60 percent of the producers surveyed perceived Pick Tennessee Products had benefited them in increased sales.

<sup>9</sup> Tennessee Department of Transportation, <http://www.tdot.state.tn.us/interstateinfo/Tnfacts.htm>

<sup>10</sup> <http://www.foodcity.com/learn/local-produce>

<sup>11</sup> Patterson, Paul M. "State-Grown Promotion Programs: Fresher, Better?" *Choices*, 1st Quarter 2006 21(1), p. 41-46.

<sup>12</sup> Govindasamy, Ramu et al. "Returns to the Jersey Fresh Promotional Program: The Impacts of Promotional Expenditures on Farm Cash Receipts in New Jersey."

<sup>13</sup> Giraud, Kelly L.; Bond, Craig A.; and Bond, Jennifer J. "Consumer Preferences for Locally Made Specialty Food Products Across Northern New England." *Agricultural and Resource Economics Review* 34/2 (October 2005) 204-216.

<sup>14</sup> Hu, Wuyang et al. "Consumer Preferences for local production and other value-added label claims in a processed food product." *European Review of Agricultural Economics*, Forthcoming 2011.

Tennessee Farm Fresh and Pick Tennessee Products were perceived by a minority of those producers surveyed to generate premiums over usual prices. About one-fourth (26 percent) of producers participating in Tennessee Farm Fresh perceived price premiums as a benefit of participating in this program.<sup>15</sup> Only 16 percent of those surveyed perceived their participation in Pick Tennessee Products as a way of generating price premiums.

**Table 2. Fruit and Vegetable Producer Perceptions of State Programs, 2011**

	Pick Tennessee Products	Tennessee Farm Fresh
Percent of program awareness among surveyed producers	47.37%	38.55%
Percent of program membership among surveyed producers given awareness	34.43%	20.20%
<b>Program member perception of program's benefits</b>		
Increased sales	60.49%	74.36%
A premium over usual prices	16.05%	25.64%
Access to new markets	48.15%	51.28%
No perceived benefit	18.52%	12.82%

Source: Vegetable Working Group. 587 responding of 1,954 questionnaires.

These data suggest that producers participating in the programs do not widely perceive the programs generating premiums over usual prices. The economic research into state-sponsored marketing programs, although relatively limited, suggests that the effectiveness of such programs is measured by **their ability to ultimately obtain higher producer prices for fresh produce**. Produce crops tend to be relatively easily grown across state lines and, as already stated, are often produced by very large players. Establishing a value in the consumer's mind for the product is essential to obtaining price premiums. These premiums are often necessary for profitability in areas where wholesale produce supply chains are not as established. For larger-scale, wholesale products, the conclusion of one key study may be especially true:

**“Price premiums are most likely to be achieved for differentiated, specialty products, whose production or reputation is uniquely tied to a particular state.”** (Patterson, 2006)

Opportunities could be explored to wed a state's existing program, such as Pick Tennessee Products, to targeted promotions designed to increase prices received for locally grown produce. Success of such marketing efforts through state-level promotional programs appears dependent on a program's ability to create more choices for consumers interested in purchasing local foods, often resulting in higher prices received by producers. The results of the 2011 survey also indicate more than half of surveyed fruit and vegetable producers are unaware of the existing programs. Although the programs are established, there appears much room for growth in how they may be utilized and benefit Tennessee's fruit and vegetable producers.

<sup>15</sup> “2011 Fruit and Vegetable Producer Survey.” Dayton M. Lambert, James A. Davis, Mike Wilcox, Annette Wszelaki, Christopher Clark, and Margarita M. Velandia (Vegetable Working Group). Obtained from the authors, January 2012.

## The Tennessee Wholesale Produce Industry: Opportunities

- » Potential for produce growers to ride the wave of local foods popularity to develop smaller, local wholesale markets.
- » Improvements in season-extension techniques and certified organic/specialty production methods.
- » Increased openness from retailers and wholesalers for sourcing produce crops closer to final retail location.

### *Opportunity: Potential for produce growers to ride the wave of local foods popularity to develop smaller-scale local wholesale markets*

Increased consumer interest in eating local food is well-documented and has come to be acknowledged as a staying trend in the wholesale produce industry. Since the term “local” has become a major issue and buzzword around developing possibilities in the produce industry, an examination of the trend of local food and its current and future marketing possibilities is provided here in four parts:

- » Definition of local food.
- » Key results of research into local produce market channels and database matching programs.
- » Market potential for local products with wholesale buyers.
- » Evaluation of matchmaking database systems.

#### **Definition of Local Food**

One of the difficulties in a discussion of developing wholesale markets for local produce is the lack of a uniform definition of local produce. As researchers recently noted, “There appears to be no generally agreed and widely accepted definition of local food.”<sup>16</sup> One popular definition of “local,” popularized by the locavore movement, defines local food as that originating within 100 miles of the consumer. Major food retailers, including Wal-Mart and Whole Foods, often use a wider distance to define local foods.

Research conducted in Ohio and Kentucky, however, quantified the actual distance for “local food” perceived by consumers as much shorter than commonly accepted industry and popular definitions. In that study, only about 27 percent of consumers surveyed accepted “local” as originating at a distance of 100 miles or greater.<sup>17</sup> This research indicated that fresh produce was a product category shown to be more sensitive to definitions of local held by different consumer groups. In other words, a consumer’s definition of a “local tomato” may involve the tomato being grown fewer miles from the point of purchase than a “local pickle.”

<sup>16</sup> Abatekassa, Getachew and Peterson, H. Christopher. “Market Access for Local Food through the Conventional Food Supply Chain.” *International Food and Agribusiness Management Review*. Vol. 14, 1: 63-82 (2011), 65.

<sup>17</sup> Hu, Wuyang et al. “What is Local and for What Foods Does it Matter?” *Selected Paper, Southern Agricultural Economics Association Annual Meeting*, February 6-9, 2010. Accessed at <http://purl.umn.edu/56326>

The Food Marketing Institute's 2011 Grocery Shopper Trends report indicated that locally produced food continued to gain popularity with shoppers. This report, based upon consumer surveys, revealed about the same percentage of consumers define local as produce grown in their home state (44 percent) as those grown within a certain mile radius of where they live or shop (41 percent).<sup>18</sup>

For the purposes of the USDA/Rural Development Value-added Agricultural Market Development program, 2008 legislation defines the total distance that a product can be transported and still be eligible for marketing as a "locally or regionally produced agricultural food product" as less than 400 miles from its origin, or the state in which it is produced.<sup>19</sup>

Definitions of "local," then, differ substantially between different players on both supply and demand sides of the produce industry.<sup>20</sup> Market development for "local" produce supply chains should hold these differentiations in mind and develop where possible around the consumer's preference in a particular area. "Local" as an attribute of food can depend on the characteristics and geography of the community in which the term is being used. **There are many practical reasons to allow for flexible definitions of local within the various contexts of the produce industry.**

*There are many practical reasons to allow for flexible definitions of local within the various contexts of the produce industry.*

### **Key results of studies describing results of local produce marketing policy/programs**

Local foods, especially local produce, have inundated the academic, trade and popular food literature during the past decade. Several recent studies have helped crystallize results of local produce marketing programs and offered a base from which to evaluate potential of marketing local products to wholesale buyers. This research will be summarized under two main areas:

- » Market potential for local products with wholesale buyers.
- » Evaluation of matchmaking database systems.

### **Market potential for local products with wholesale buyers**

A linchpin report in evaluating market access for local food through the wholesale food supply chain was published in February 2011 by two Michigan State agricultural economists.<sup>21</sup> While the report focused on southeast Michigan, the report's conclusions are well-grounded and applicable to evaluating how to develop market potential for local products in states such as Tennessee.

<sup>18</sup> FMI Grocery Trends 2011. May 10, 2011. Accessed September 8, 2011 at [http://www.fmi.org/news\\_releases/index.cfm?fuseaction=mediatext&id=1236](http://www.fmi.org/news_releases/index.cfm?fuseaction=mediatext&id=1236)

<sup>19</sup> Martinez, Steve et. al. Local Food Systems: Concepts, Impacts, and Issues, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010. Accessed at <http://www.ers.usda.gov/Publications/ERR97/ERR97.pdf>

<sup>20</sup> See e.g. Schmit, Julie. "Locally Grown Food Sounds Great, But What Does it Mean?" *USA Today*, October 31, 2008. Accessed September 6, 2011 at [http://www.usatoday.com/money/economy/2008-10-27-local-grown-farms-produce\\_N.htm](http://www.usatoday.com/money/economy/2008-10-27-local-grown-farms-produce_N.htm)

<sup>21</sup> Abatekassa, Getachew and Peterson, H. Christopher. "Market Access for Local Food through the Conventional Food Supply Chain." *International Food and Agribusiness Management Review*. Vol. 14, 1: 63-82 (2011).



*Assistance provided to produce growers to fulfill QA (quality assurance) guidelines can have positive effects on increasing the volume of produce production.*

The Michigan study's short story is this: wholesalers recognize the market potential for locally grown produce, but are deterred by common barriers encountered when attempting to source local products. This report, developed through a series of case studies with food industry players, found that producers needed "to provide additional market services and develop trust-based relationships with their buyers to create better market access for local foods." Additional market services, as described in this study, include traceback technology and additional information about the crops. Trust-based relationships mean that growers are willing to be accessible and totally transparent about their product to their suppliers. This could include on-farm audits and inspections and the producer's willingness to establish

ongoing conversations with the wholesale purchaser about product quality and availability.

**Assistance provided to produce growers to fulfill QA (quality assurance) guidelines can have positive effects on increasing the volume of produce production.**

**Evaluation of matchmaking database systems**

Matchmaking database systems can allow users to search for particular products within a particular geographic area. The most prominent matchmaking database system relative to developing potential markets for farms producing fruits and vegetables may be MarketMaker. MarketMaker was developed in 2004 "by a team from University of Illinois Extension with the intention of building an electronic infrastructure that would more easily connect food producing farmers with economically viable new markets."<sup>22</sup> The program allows producers to list their farms, at no cost, to increase exposure to food buyers seeking certain products. MarketMaker also uses business database information to provide listings of potential food markets, allowing producers to search for potential buyers. According to the national MarketMaker website in December 2011, the program is now live in 18 states and is in progress in two additional states.<sup>23</sup>

MarketMaker has been heavily used in New York, and a paper published in 2010 offered an evaluation of the program in that state.<sup>24</sup> A survey of 374 producers using MarketMaker indicated that "the majority of MarketMaker participants are small and midsized producers and NY MarketMaker is helping them to access a direct and niche market and improve their economy." The program had success in penetrating the New York City market. A distinctive area of the New York MarketMaker website was a focus on wineries, due to that state's vibrant wine tourism industry. The paper emphasized that the target was New York's small and midsized agricultural producers.<sup>25</sup> Extensive online training through Cornell University Extension was also made available to producers using the MarketMaker program.

<sup>22</sup> "About MarketMaker." <http://national.marketmaker.uiuc.edu/about.php>

<sup>23</sup> In October 2011, MarketMaker was live in Arkansas, Colorado, District of Columbia, Florida, Georgia, Iowa, Illinois, Indiana, Kentucky, Louisiana, Michigan, Mississippi, Nebraska, New York, Ohio, Pennsylvania, South Carolina and Wyoming and was in-progress in Alabama and Texas.

<sup>24</sup> Cho, Khin Mar and Tobias, Donald Jerome. "Improving Market Access for Small and Midsized Producers through Food Industry Electronic Infrastructure MarketMaker." Selected Paper, Southern Agricultural Association Annual Meeting, Orlando, FL, February 6-9, 2010. Accessible online at <http://purl.umn.edu/56564> Clemson researchers have recently published an evaluation across the Market Maker network indicating apparently weak impacts, but with some limitations on survey sample size.

<sup>25</sup> Cho and Tobias

Table 3 shows the summary from the New York survey of MarketMaker users. About 75 percent of the users replied “No” or “Not Sure” when asked if they had any marketing contacts come to them through MarketMaker. Only 13 percent of the producers indicated that they had used MarketMaker to contact others. Of those 46 producers using MarketMaker to contact others, 38 said that they made two to four contacts through the program.

It is noteworthy that only eight New York producers (2 percent) indicated MarketMaker had helped them increase farm product sales by \$5,000 to \$9,999. The remaining 98 percent of respondents who had used MarketMaker said that the program helped increase the dollar value of their business sales by less than \$5,000. Moreover, 188 of these producers (50 percent of respondents) reported MarketMaker helping increase their sales by less than \$500.

**Table 3: 2009 Survey of 374 New York MarketMaker producer users: responses to their marketing contacts through MarketMaker (N=374)**

Question/ Responses	Have you had any marketing contacts that have come to you through MarketMaker? If yes, how many?		Have you used the MarketMaker Directory to contact others? If yes, how many?	
Yes	85	23.7%	46	13.1%
No	147	40.9%	194	55.4%
Not Sure	127	35.4%	110	31.4%
One	15	17.2%	7	14.9%
Two-four	70	80.5%	38	80.9%
Five-ten	2	2.3%	1	2.1%
more than ten	0	0.0%	1	2.1%

The New York researchers emphasized that MarketMaker was proving especially successful for penetration into the New York City market, helping increase the availability of regionally grown foods to urban residents. The program definitely helped small and mid-sized farmers gain access to potential food buyers and increase awareness for their farm, and appears to have been aided with nearby access to a large, metropolitan market.

It is always risky to base conclusions about a program on one published report, and additional evaluations of MarketMaker’s effect in other states should be forthcoming. However, the New York report’s conclusions that (through 2010) MarketMaker mainly provided aid and education to small and very small operations are corroborated by anecdotal accounts and producer profiles on the various MarketMaker websites. While MarketMaker has been a useful tool for some small growers wanting to expand their direct marketing efforts, any effects of MarketMaker on developing mid-sized and larger-volume, wholesale market outlets for fruits and vegetables remain presently unclear and publicly undocumented.<sup>26</sup> MarketMaker is a minor contributor compared to the portfolio of institutions and programs that could be more critical to increasing farm income from produce.

<sup>26</sup> This may be due to an online database failing to account for the highly relational nature and “face time” apparently inherent to making connections with major produce wholesalers.

Finally, a forthcoming article in the *Journal of Agribusiness* reports an evaluation of MarketMaker at the national level by Clemson University researchers.<sup>27</sup> This report, although somewhat limited by the producer sample size, indicates increased sales per farm of \$121 for participation in MarketMaker. The report's conclusions suggest that states considering the adoption of MarketMaker "should consider providing dedicated resources not only for site development and maintenance, but also for programmatic development and delivery. This will require some combination of state-level reallocation of existing resources or identification of new resources to deliver more training and promotion."

### *Opportunity: Improvements in Season-extension Techniques and Specialty Production Methods*

Length of the supply season is a notorious barrier for expanding the wholesale produce industry in states without extended growing seasons. The supply season may also indirectly present challenges in states where storage infrastructures may not be in place for less perishable produce crops harvested later in the season, such as apples or hard squash. Although new varieties and season-extension principles (like greenhouse production of vegetables) can extend the season in nontraditional production areas, it is still difficult for Tennessee producers to single-handedly access wholesale markets without having some ability to extend the season or establishing ties to those with a longer supply season.

There has been a nearly widespread emergence of season-extension techniques that can benefit local producers. There also have been many introductions of new commercial vegetable varieties with either earlier maturity dates or that may be planted later in the season for fall harvest. **It should be noted that many of the season-extension techniques suited to Tennessee's climate, such as high-tunnel production, are typically employed in lower-volume, direct market operations.** However, many season-extension techniques are more applicable for larger-scale production. For example, some shorter-season pumpkin varieties could be double-cropped after harvest of an early spring crop like strawberries or hay. Changing variety and production systems for crops like cucumbers can result in commercially profitable fall production.

But perhaps the most important change in fruit and vegetable production has been the emergence of larger-scale, certified organic production systems. Commercial organic vegetables have emerged as a faster-growing segment of the produce industry, experiencing steady growth even among the economic downturn of recent years. Because much certified organic production is based on the West Coast, farther from population centers in the East and Midwest, some market possibilities may exist for Tennessee producers to enter the certified market channel for some crops. However, geographically appropriate research and development of certified organic techniques, as well as producer education for proper production and handling of certified organic crops, seem crucial to the greater development of the industry.

<sup>27</sup> Zapata, Samuel D. et al. "Do Internet-Based Promotions Work? Evaluating MarketMaker." *Journal of Agribusiness*. Forthcoming, 2012. Manuscript obtained from the authors.

A lesser-known aspect of the certified organic industry is certified organic greenhouse production. Production of crops such as tomatoes and peppers under greenhouse shelters is very capital-intensive, but can be economically efficient for certain crops in many markets. Some larger-scale greenhouse production of herbs to sell at wholesale to chain supermarkets has already been accomplished in Tennessee and Kentucky. Many farm producers find the capital requirements for establishing wholesale greenhouses to be prohibitive; however, possibilities for organic vegetable production under shelter at both small- and high-volume levels do exist.

### *Opportunity: Increased openness from retailers and wholesalers for sourcing produce crops closer to final retail location*

Chain supermarket merchandising efforts to highlight local products has increased as consumers place more value on local production.<sup>28</sup> In many cases, however, chains have simply adjusted their merchandising to reflect existing relationships with long-standing local suppliers. Chain supermarkets are willing to highlight and offer local products if the wholesale price of local products is competitive. This reinforces a principle highlighted for state marketing products, like the Pick Tennessee Products program. **Smaller or regional retailers may be more willing and/or able to adjust procurement practices to include local products due to purchase decisions and product requirements made at the local store-level.** Still, the success of marketing local produce largely depends on being able to obtain a higher consumer price for that product relative to prices paid for comparable, non local products.

### **Reliability in meeting price, quality, logistics and delivery requirements of retailers**

Quality and product requirements for most produce crops demand price, packaging, logistics and delivery requirements entry-level producers may often be unable to meet. Smaller-scale wholesale outlets (such as produce auctions) can present opportunities for some mid-sized wholesale opportunities by providing buyers the opportunity to purchase products of similar quality from different producers and aggregate it into one larger shipment. Such aggregation creates economies of scale that enable a buyer to purchase the desired amount of product from a single source; the auction is functioning as a way for smaller growers to create larger lots of produce. Meeting buyer needs for economies of scale and larger purchases explains the many historical examples from the produce industry where product aggregation and delivery has been fulfilled through the formation of producer co-ops; Sunkist and Ocean Spray are two consumer brands tracing their origin to farmer-owned co-ops. Experiences in states neighboring Tennessee, and observations from successful produce industry efforts elsewhere, indicate that cooperative marketing (whether by formal co-ops or other structures like auctions and distribution centers or small-scale local wholesalers) is more likely to be successful when producers are both personally and financially invested in the marketing effort.

<sup>28</sup> For examples of these kinds of programs among major chains, see the Weis Markets “Your Neighbors, Our Farmers” program recently reported at <http://www.thepacker.com/fruit-vegetable-news/Weis-Markets-highlights-locally-grown-produce-128033583.html> and the Wal-Mart “Heritage Agriculture Program,” <http://walmartstores.com/Sustainability/10378.aspx>.

## Differences between local independent retailers and supermarkets regarding local foods

A recent study of Missouri restaurants indicated the same general conclusions common for local produce expansion and development echoed throughout this report. The survey results of restaurants in a metro area indicated that “local vegetable producers should use regularity, quality, and freshness to differentiate themselves.”<sup>29</sup> This study also found that price was not as critical a factor as was variety and selection for smaller-volume purchasers. This conclusion, while true for smaller volumes, is not as true for marketing larger-volumes of wholesale produce. Interestingly, the Missouri study concluded that the produce industry was moving toward fewer products delivered year-round, and smaller producers should invest in season-extending techniques (greenhouses) to gain a competitive edge in the major wholesale produce items.

*Smaller or regional retailers may be more willing and/or able to adjust procurement practices to include local products due to purchase decisions and product requirements made at the local store-level.*

## Barriers to Produce Industry Expansion in Tennessee

- » Preference of retailers for grower-shippers and/or produce brokers and wholesalers who can supply large amounts of product both across a well-defined time frame and according to increasingly stringent product traceability and food safety guidelines.
- » Continued produce industry consolidation.
- » Lack of Tennessee-based, diversified national grower shippers.
- » Lack of specialized, local supply chain infrastructure for perishable crops.
- » Ambiguity and uncertainty concerning impacts of food safety regulations, especially impacts upon small and midsized produce growers and wholesalers.

This section will offer more detail about each barrier for produce industry expansion.

*Barrier: Preference of retailers for produce suppliers who can supply large amounts of product across well-defined time frames and according to stringent product and food safety guidelines*

At all levels in the fresh produce supply chain — even among restaurateurs and grocers featuring local produce — buyers show a preference in purchasing from producers who can supply consistent amounts of product across a well-defined time frame. This preference is especially prevalent among retailers and other wholesale buyers. Despite the renewal of interest in locally grown attributes, retailers may be largely hesitant to work with producers who can only provide supply for a certain market window. The lack of an ability to supply an item across a longer season is a barrier to shipping to larger retailers.

<sup>29</sup> Rimal, Arbindra and Onyango, Benjamin. “Purchasing Locally Produced Fresh Vegetables: National Franchise vs. Locally Owned and Operated Restaurants.” Selected Paper, Agricultural & Applied Economics Association, July 2011. Accessed at <http://purl.umn.edu/103464>.

The purchase of local products may also result in less-than-ideal traceability and food safety procedures as perceived through the eyes of larger retailers. Published reports in the produce industry trade press, as well as stories of retailer experience with purchasing and featuring local product over typical wholesale channels, suggest that retailers may forego some typical traceability protocol if electing to feature regional or local product. Such purchases may be justified because of renewed interest in local product. The industry trend, however, is that retailers mitigate food safety risks by purchasing more from produce suppliers who can guarantee traceability and production practices used in the food chain.

This is not to say that larger retail opportunities are closed to new suppliers. The country's largest retailer, Wal-Mart, has launched a Heritage Agriculture program that specifically seeks to source produce from more regional growers.<sup>30</sup> This is grouped into several regions and includes a Delta States Project (including southwest Tennessee) and an "I-95 Corridor Project that extends to East Tennessee. Other retailers, like Kroger and even discounters such as Save-A-Lot, have also remained open to more regional sourcing.

Such programs have represented a small amount of total produce purchases by the country's larger retailers, and the impact of these programs is expected to remain a very minor portion of produce purchases by national retailers. In addition, retailers remain more willing to work with progressive producers who may already be better-equipped or have access to capital needed to supply larger amounts of produce. For example, published information about Wal-Mart's Heritage Agriculture Program indicates participating producers are those able to supply larger amounts of acreage. Large retailer incorporation of relatively smaller (20-100 acre) producers is, as yet, the exception rather than the norm — even in light of local food trends. There also can be some inherent economic risk to producers who "put all their eggs in one basket" by relying on a single buyer or market for expansion.

### *Barrier: Continued produce industry consolidation*

Continued consolidation of the produce industry may be illustrated by the 2007 Census of Agriculture data presented earlier in this report. These data indicated that more than half of Tennessee's commercial vegetable acreage was harvested by only five farms. This trend mirrors the consolidation of fresh produce firms nationwide. A decreasing number of producers are producing a greater percentage of the total fruit and vegetable crop nationally.

While this creates a smaller playing field of potential buyers, consolidation may not be viewed entirely as a barrier. Producers willing to negotiate and supply high-quality and high-volume produce crops, especially crops for which market demand is growing, can have opportunities for expansion. Small and midsized niche markets exist, but these may be impractical or uneconomical for larger grower-shippers to enter. The rise in consumer interest in local food has seen these niche markets multiplying.

<sup>30</sup> "Heritage Agriculture Program." <http://walmartstores.com/Sustainability/10378.aspx>

*Barrier: Lack of Tennessee-based, diversified national grower-shippers*

A third barrier to produce industry expansion in Tennessee is a lack of locally based, diversified national grower-shippers. Tennessee firms supplying wholesale quantities of produce are focused on a few major crops, and these crops are well-established as mainline commodities within the produce supply chain. This means that the current produce crops most easily grown in Tennessee are also easily grown in surrounding areas. This inherently creates more price and quantity competition, especially due to Tennessee's proximity to states with relatively well-established wholesale produce industries.

Many major produce grower-shippers do have a presence in the Southeast, but such presence is typically in states with a more developed fresh produce infrastructure: North Carolina, Georgia, or Florida, and occasionally Alabama/Arkansas. In such areas, grower-shippers are often large enough to capitalize updated packing and cooling facilities, or to ship large loads to retail or food service distributors.

**For new alliances with larger firms to be successful, marketing and market development alternatives for increased production should be developed in the event that a particular buyer loses interest or commitment to purchasing crop for a given area.**

Like produce industry consolidation, the lack of major national Tennessee-based grower-shippers could represent an opportunity as well as a barrier. Larger produce firms are frequently on the lookout for expansion and diversification opportunities in new areas, especially areas that may present potential transportation savings or strategic locations. However, national produce firms are accustomed to moving operations from one geographic area to another. **For new alliances with larger firms to be successful, marketing and market development alternatives for increased production should be developed in the event that a particular buyer loses interest or commitment to purchasing crop for a given area.** This highlights a principle critical in produce market development: developing and growing different kinds of market outlets, opportunities and channels suited to the same crop.

*Barrier: Lack of specialized, local supply chain infrastructure for perishable crops*

Fourth, while there are possibilities for developing smaller-scale or "local" produce supply channels, such chains require capital investment to ensure food quality and safety. As noted above, areas with higher volumes of fresh produce production are more likely to develop such supply chain infrastructure.

The cost of updated technology and traceback protocol is a barrier for smaller produce growers. While the economies of scale for adopting various systems and technologies can vary by product, volumes of more than 20 to 40 acres for a particular crop are almost always required to justify implementing some safety protocols. While smaller producers could potentially realize some economies by cooperative marketing agreements, producers will still have to incur or bear costs associated with handling, packing, sorting and grouping produce for shipment.

This barrier could potentially be overcome by identifying fresh produce crops or production systems that incur less natural risk. Some production systems (such as certified organic or contractual production) may have regulations or contract language that overlaps with food safety documentation. The extent to which the producer has to bear the cost of such handling varies considerably by situation.

*Barrier: Ambiguity and uncertainty concerning impacts of food safety regulations, especially impacts upon small and mid-sized produce growers and wholesalers*

Finally, food safety issues are perhaps the most significant barrier to entry into the wholesale produce industry. Retailers continue to demand a greater level of accountability and traceback. Emerging food safety regulations are currently either unclear or undetermined about future requirements for producers and produce handlers. The high degree of uncertainty surrounding some aspects of the produce industry — such as what requirements food safety guidelines will place upon a market mechanism like a produce auction — create a significant uncertainty around some small and mid-sized produce market mechanisms.

Food safety issues surrounding the produce industry have been amplified by several developments in 2011. At the beginning of the year, the signing of the Food Safety Modernization Act (FSMA) created regulatory authority for the FDA in many sectors of the food supply chain, including fresh produce. Since the rulemaking for this legislation is ongoing, and since there has been uncertainty as to the extent of the funding available for the legislation's implementation, the implications remain unclear.

Compounding the uncertainty around food safety legislation was the presence of some language in the FSMA that appeared to exempt certain kinds of small and mid-sized growers from adhering to the law's regulations. This language was largely unpopular within the larger-scale, commercial produce industry, which views such opt-outs as creating potentials for food safety breaches that could impact the broader industry. At the same time, the opt-out language of the so-called "Tester Amendment" to the FSMA was supported by many local food and sustainability advocacy groups.

The final effect of the FSMA legislation, and the precise rules and time frame for implementation, remain unclear. This has created a caution for expansion among produce growers of varying sizes, particularly smaller producers. For example, a smaller grower who may be exempted under the probable interpretation of the FSMA language may lose that exemption upon expanding his or her operation and be saddled with various costs of regulatory compliance. The risk of this legislative uncertainty remains very real for many mid-sized growers considering expansion.



# Entering the Produce Supply Chain: Farm-to-Grocery, Produce Brokers and Farm-to-School

Programs such as farm-to-school, and the emergence of nontraditional wholesale market channels like produce auctions, are often discussed when evaluating the development of produce supply chains. Specific questions and programs frequently addressed in produce marketing discussion and expansion are presented below:

- » What creates difficulty in farm-to-grocery connections?
- » What works with the broker model, and can it be replicated by database programs?
- » What does it take for successful farm-to-school programs?

## *What creates difficulty in farm-to-grocery connections?*

Access to wholesale grocery store outlets has historically favored produce growers with larger operations that can deliver “packaged and labeled products at specific grades, sizes, at sufficient volume for enough time to permit the creation of an appropriate market infrastructure to serve large-scale buyers.”<sup>31</sup> Stores may also prefer packaged produce items (such as fresh-cut salads) that require greater infrastructure and processing than may be locally accessible.<sup>32</sup> Despite the growing popularity of local foods among consumers, the size and scale required to enter the grocery market is still a barrier for newer or inexperienced producers. This has resulted in local options at groceries often being produced by producers already able to handle high quantities or who are already long-time suppliers to a particular supermarket chain.<sup>33</sup>

Another key issue driving farm-to-grocery connections is the ongoing, changing food safety standard. The complexities of this issue were most recently highlighted during the summer of 2011 when an *E. coli* outbreak, linked to deer droppings, occurred in strawberries grown by a relatively small (35-acre) Oregon strawberry farm and resold at farm stands.<sup>34</sup> Shortly thereafter, a listeria outbreak was traced to Colorado-grown melons, followed by reports of another listeria outbreak in packaged romaine lettuce. The high profile given to food safety concerns in fresh produce emphasizes that producing and selling food requires the assumption of risk for its safety for food producers. Grocery chains may require producers to demonstrate safety audits, liability coverage and assume other risk management tools that may be deemed cost-prohibitive to some producers.

<sup>31</sup> Eastwood, David B. et al. “Changing Produce Marketing Barriers: A Comparison Among Three Southern States.” *Journal of Agricultural and Applied Economics*, 35,2 (August 2003):297-304.

<sup>32</sup> Demand increase for fresh cut items has been well-documented in the past decade, including among buyers in Tennessee and surrounding states. See e.g. Tim Woods and Matt Ernst, “2004 Produce Buyers Survey,” University of Kentucky Department of Agricultural Economics AEC-EXT 2004-05, [http://www.uky.edu/Ag/AgEcon/pubs/ext\\_aec/ext2004-05.pdf](http://www.uky.edu/Ag/AgEcon/pubs/ext_aec/ext2004-05.pdf)

<sup>33</sup> Industry opinions on these programs vary; see e.g. Jim Prevor’s Perishable Pundit “Wal-Mart’s Heritage Agriculture Program Gets Good Press But Doesn’t Make a Dent,” (June 29, 2010) at <http://www.perishablepundit.com/index.php?date=06/29/10&pundit=1>.

<sup>34</sup> Beach, Coral. “Strawberry investigation continues, sparks Tester Amendment discussion.” <http://www.thepacker.com/fruit-vegetable-news/Strawberry-investigation-continues-Tester-Amendment-discussed-127587343.html>

### *What works with the broker model, and can it be replicated by database programs?*

No database can replace the broker's role in the produce industry. The wholesale produce industry is, perhaps more than any other agricultural sector, inherently relational. Those involved in the industry — produce growers, shippers, wholesalers and brokers — are frequently part of firms, many family-based, that have been involved in the industry for generations.

At first glance, this may appear to be similar to other agricultural commodities. There are countless family farm operations in Tennessee that have been producing beef, row crops and tobacco or specialty crops for generations. What differentiates the wholesale produce industry, however, is the extent to which personal relationships play into the supply chain. Because of the relatively fewer firms at the wholesale level, and because of the role that produce brokers have played within the industry, product movement is accompanied by relational networks that can date generations.

Remarkably, this attribute has continued even as the fresh produce industry has adopted and used high-technology solutions to product movement (such as RFID), food safety (traceback) and logistics. The fresh produce industry may be the most technology-intensive sector of the food industry.

Recent efforts, of which the most prominent may be the MarketMaker program, have sought to harness database technology to match agricultural producers with wholesale buyers. These programs have sometimes been popularized as a means of “eliminating the middleman,” presumably a broker or wholesaler, allowing producers to gain access to new markets.

Such efforts can certainly generate potential new markets and avenues for farm goods. They may especially be helpful in bringing those experienced in direct marketing fruits and vegetables (such as at farmers markets) into contact with new markets seeking smaller volumes of wholesale produce, as is the evidence in New York. However, one challenge for such database programs, relating to wholesale buying in the fresh produce industry, is a preference among members of the produce supply chain to deal directly with experienced producers or marketing firms.

Admittedly, the number of brokerage firms and their clout within the produce industry has declined, as larger retailers seek to acquire produce through contracts directly negotiated with grower-shippers. However, this does not mean that produce brokerages, and their established relational networks, have exited the industry. A 2009 faculty paper from the University of Georgia that examined business operations data postulated that rather than exiting the industry, produce brokerages have shifted to focusing their efforts on wholesaling, with smaller firms growing and merging into larger entities that are more focused on food service rather than retail.<sup>35</sup>

It is well-documented that food service establishments, including those interested and/or “committed” to procuring local products, still prefer to work within a brokerage or wholesaler system to supply their volume needs.<sup>36</sup> Therefore, fresh produce growers looking to increase wholesale volumes will likely still need to develop relationships directly with wholesalers. Another possibility, involving large commitments of time and capital, is to create new wholesale entities specializing in local produce.

<sup>35</sup> Epperson, J.E. “An Examination of the Market Structure of the U.S. Produce Industry.” University of Georgia Department of Agricultural and Applied Economics Faculty Series 2009-01. <http://purl.umn.edu/50259>

<sup>36</sup> See e.g. Rimal and Onyango, 2011.

In short, what made produce brokers a major part of the produce industry before greater use of direct contracting between grower-shippers and food retailers was the tight relational network established between brokerages and their food retail customers. These relationships have apparently transferred over into the produce wholesaler sector. As food service demanded more fresh produce, brokerage firms (most probably) transferred their expertise in procuring and moving produce away from retail and into food service.

### *What does it take for successful farm-to-school programs?*

The number of farm-to-school programs has followed the increase in other locally grown channels, from 400 nationwide in 2004 to more than 2,000 farm-to-school programs in 2010.<sup>37</sup> In Tennessee, schools in Hancock, Hawkins and Cocke counties began a farm-to-school program in 2005. This resulted in one producer processing potatoes into potato wedges at a local certified kitchen. Programs began in Knox and Williamson counties in 2010-11.

Farm-to-school programs enjoy much press, as they offer institutional purchasing from local producers and have the potential benefit of promoting healthy food choices among public school students.<sup>38</sup> Farm-to-school programs can also appeal to producers of varying sizes. Larger volumes of products like potatoes and apples may be purchased from producers already accustomed to supplying wholesale volumes. Some programs offer smaller producers small-volume opportunities as vegetables served in the lunchroom are combined with lessons about crop production and local food systems in the classroom. In fact, published dietetic education research has indicated that students are more likely to increase fruit and vegetable intakes when presented with educational curricula in the classroom.<sup>39</sup>

Farm-to-school programs are therefore viewed as most helpful when incorporated as part of multiple efforts to increase local produce consumption. For farm-to-school programs to maintain long-term sustainability, producers must implement:

- » Sound and consistent product delivery and quality.
- » A food safety program and/or liability insurance meeting the buyer's requirements.
- » Connections of food to classroom curricula and/or student family experiences.

The existence of infrastructure for delivering produce to schools in a systematic, predictable way is crucial.<sup>40</sup> Successful farm-to-school programs have also used or relied on state and NGO funding and program support for success. **The program should also be integrated into the school curricula, possibly requiring in-classroom producer participation, and should be tied to a whole-system approach.**

*The program should also be integrated into the school curricula, possibly requiring in-classroom producer participation, and should be tied to a whole-system approach.*

<sup>37</sup> National Farm to School Network, <http://www.farmtoschool.org/aboutus.php>, Accessed September 8, 2011.

<sup>38</sup> Bagdonis, J.M., C.C. Hinrichs, and K.A. Schafft. 2009. "The Emergence and Framing of Farm to school Initiatives: Civic Engagement, Health and Local Agriculture," *Agriculture and Human Values*, Vol. 26, pp. 107-119.

<sup>39</sup> McAleese, J.D., and L.L. Rankin. 2007. "Garden-Based Nutrition Education Affects Fruit and Vegetable Consumption in Sixth-Grade Adolescents," *Journal of the American Dietetic Association*, Vol. 107, pp. 662-665.

<sup>40</sup> Vogt, R.A., and L.L. Kaiser. 2008. "Still a Time to Act: A Review of Institutional Marketing of Regionally-Grown Food," *Agriculture and Human Values*, Vol. 25, pp. 241-55. Cited in Martinez et al. *Local Food Systems: Concepts, Impacts, and Issues*, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010.

Farm-to-school initiatives in many states started as part of the Department of Defense (DOD) purchasing program. In North Carolina, the old DOD program was reinvented into a farm-to-school cooperative.<sup>41</sup> This cooperative, promoted and supported extensively by the North Carolina Department of Agriculture & Consumer Services, purchased nearly \$1 million of produce during the 2010-2011 school year, especially apples and strawberries.<sup>42</sup> The program also includes classroom lesson plans and other in-school resources. The presence of a developed produce industry infrastructure and experienced growers in North Carolina, combined with public investment, have undoubtedly been primary factors for the state's ability to successfully source fresh produce in the schools. Adequate staffing and salary support for personnel to develop and administer farm-to-school programs is also present in states where such programs have grown.

Still, this farm-to-school success story represents a very minor amount of North Carolina's total produce sales.<sup>43</sup> In short, farm-to-school programs represent a very small part of produce market development efforts. Moreover, a farm-to-school program will not experience long-term success if an effort is simply made to purchase a quantity of produce from local producers. Supply chain development (guarantees of product quality as well as quantity and delivery), along with connections in the classroom, must be developed in successful farm-to-school programs. Success of farm-to-school programs can be measured not just in terms of the volume of product moved, but also in terms of how well the program takes advantage of an opportunity to connect and educate students and their families about how food is grown and where it comes from.

<sup>41</sup> North Carolina Farm to School, <http://www.ncfarmtoschool.com/htm/about/history.htm>.

<sup>42</sup> <http://www.ncfarmtoschool.com/htm/about/documents/2010-2011farmToSchoolTotals.pdf>

<sup>43</sup> For example, \$1 million in purchases is near the annual sales volume of Kentucky's smallest produce auctions.

## Specific Possibilities for Tennessee

Possibilities for expanding Tennessee wholesale produce industry are presented and discussed below:

- » Are produce auctions the wave of the future for conventional farmers?
- » Do pre-planting contracts remain feasible, and how can producers find buyers for production beyond contract levels?
- » Where are the produce wholesale buyers, what are they looking for, and how do producers connect with them?
- » What is the feasibility of a statewide clearinghouse for products/growers?

### *Are produce auctions the wave of the future for conventional farmers?*

Produce auctions have been one of the more interesting market wholesale channels that have developed for small and mid-sized horticultural producers during the past 20 years. Produce auction development, particularly in states with significant communities of Amish and Mennonite farmers (Pennsylvania, Wisconsin, Ohio, Kentucky and Missouri) has been well-reported in the Extension literature and the farm press.<sup>44</sup> Successful produce auctions actively attract buyers, usually by word-of-mouth or personal contacts, and have a seller base committed to receiving auction prices and offering consistent volumes of high-quality, well-packaged and graded products.<sup>45</sup>

Surveys of Kentucky fruit and vegetable growers in the mid-2000s indicated that auction sellers are highly committed, with one-third of auction sellers marketing 75 percent or more of their produce through the produce auction. A survey in 2010 indicated that 18 percent of all Kentucky produce growers surveyed had marketed 10 percent or more of their produce at an auction.<sup>46</sup> The largest produce auction in Kentucky, Fairview Produce Auction, is located near the Tennessee border and reportedly regularly attracts Tennessee wholesalers.

Early evaluations of produce auctions in Pennsylvania indicated that the majority of purchasers were those operating roadside stands or farmers supplementing their own direct market offerings.<sup>47</sup> Produce auctions have attracted larger-volume restaurant and grocery buyers from a wider geographic area as they develop and grow. Kentucky's Fairview Produce Auction, in southwest Kentucky, attracts buyers from Tennessee to Chicago; the largest volume buyer at the Louisville-area Capstone Produce Auction is a Louisville grocer.

<sup>44</sup> See e.g. PowerPoint presentation of "Regional Wholesaling of Vegetables: Wholesale Produce Auctions" in Missouri at <http://agebb.missouri.edu/hort/auction/auctions.pdf> and affiliated publications at <http://agebb.missouri.edu/hort/auction/index.htm>

<sup>45</sup> "Produce Auctions." University of Kentucky Crop Diversification and Biofuels Research and Education Crop Profiles, 2011. <http://www.uky.edu/Ag/CDBREC/marketing/auctions.pdf>

<sup>46</sup> Woods, Tim. 2010 *Kentucky Produce Planting and Marketing Intentions Grower Survey and Outlook*. University of Kentucky Department of Agricultural Economics Extension Publication 2010-05, June 2010. Accessed at <http://www.uky.edu/Ag/CDBREC/plantingsurvey2010.pdf>

<sup>47</sup> Tubene, Stephan and Hanson, James. "The wholesale produce auction: an alternative marketing strategy for small farms." *American Journal of Alternative Agriculture*, 17(1), 2002, p. 18-23.

Interviews with auction managers have indicated limited space and volume and lack of cooling facilities as significant challenges for auctions. More recently, the passage of the Food Safety and Modernization Act has made it unclear as to how produce auctions will be classified under the FDA's forthcoming food safety guidelines.<sup>48</sup>

While produce auctions have proven to be good markets for small producers ramping up production, auctions require significant user commitment and investment and could benefit from offering on-site cold storage. Facilities to guarantee the cold chain, as well as other food safety and regulatory concerns, may be mandated in the future for markets such as produce auctions. Some current auctions are exploring third-party certification for good handling practices (GHP). A possible future option for auctions that could potentially address some food safety concerns could be to seek certification under the USDA Organic Program as a certified organic handling facility.

A final caution about produce auctions is that the auction format exposes producers to both national and local price fluctuations and uncertainty. The volatility of fresh produce market prices has already been observed, and local auction markets will generally reflect national volatility. However, produce auctions are also subject to additional price swings. The absence of certain major buyers can especially influence price lows on given weeks. In addition, it is intuitive that many Amish and Mennonite producers marketing at auctions are operating at lower capital and labor costs than the costs incurred by new commercial produce growers. The development of produce auctions around Amish and Mennonite communities can be at least partly explained by the role the auction plays as a social center within the local community, and the affinity for the auction as a marketing mechanism among many in the Mennonite and Amish communities.<sup>49</sup>

Produce auctions, however, have been observed to serve as catalysts for small and mid-sized produce growers in areas where auctions have been established. In addition to serving as a marketing channel, many auctions offer warehousing and discounted purchase prices for inputs such as boxes, plants and seeds. Areas where produce auctions are in operation are more likely to grow the number of producers toward a critical mass needed to attract more order buyers and larger-volume wholesale customers.

### *Do pre-planting contracts remain feasible? How can producers find buyers for production beyond contract levels?*

Contracts became the preferred method for most larger retailers to negotiate produce marketing agreements during the 1980s and 1990s.<sup>50</sup> A typical wholesale contract is held between a grower-shipper and a large supermarket retailer. The contract typically requires the grower-shipper to provide marketing services, volume discounts and other price adjustments and quality specifications.<sup>51</sup> The typical grower-shipper is usually supplying more than one product to the retailer.

<sup>48</sup> Bruch, Megan and Ernst, Matthew. *Implications of the 2011 FDA Food Safety Modernization Act on Direct Farm Marketers and Value-Added Producers*. CPA Info#185, May 3, 2011 <http://cpa.utk.edu/pdffiles/cpa185.pdf>

<sup>49</sup> See e.g. Fairview Produce Auction, Inc. Case Study at <http://www.uky.edu/Ag/CDBREC/cases/fairview.pdf>.

<sup>50</sup> Shelford, John. "Economic Impact of Contracting in the Fruit and Vegetable Industry." USDA Agricultural Outlook Forum, 2004. Accessed at <http://purl.umn.edu/32973>.

<sup>51</sup> Dimitri, Carolyn; Tegene, Ababayehu and Kaufman, Phil R. *U.S. Fresh Produce Markets: Marketing Channels, Trade Practices and Retail Pricing Behavior*. U.S. Department of Agriculture Agricultural Economic Report Number 825, September 2003. Accessed at <http://www.ers.usda.gov/publications/aer825/aer825.pdf>

Due to retailer concerns for maintaining a continuous supply of fresh fruits and vegetables, larger grower-shippers or marketing firms dominate the contract process. There have been cases of some supermarkets and grower-shippers aligning themselves with producers in nontraditional production areas, and demand for “local” food has, perhaps, increased this incidence. However, such small-volume agreements are exceptions to typical industry practice. Retailer concern over food safety guarantees, as well as economies of scale allowing large growers to sell at more competitive prices, make smaller wholesale contracts difficult for producers.

Production beyond contract levels must be marketed on the spot market or through other channels. While some alternative market channels (such as produce auctions) could provide an outlet when production exceeds contract amounts, marketing to food service and other grocers through produce wholesalers remains the more viable option for producers growing and shipping significant volumes of fresh produce. Establishing relationships with such buyers before the crop surplus occurs is highly beneficial for accessing such spot markets when needed.

The importance of food safety within produce wholesaling cannot be overstated. Contracts are now increasingly designed to stipulate production practices and allow on-farm inspection by the wholesale buyer or end client. Published studies have documented, in fact, that produce processors may actually realize less profit by using such contracts.<sup>52</sup> However, the costs affiliated with produce contracts are presumably the costs borne by the purchaser for managing liability, food safety and other related concerns.

#### *Where are the produce wholesale buyers, what are they looking for, and how do growers connect with them?*

This brings us back to what is, perhaps, the most important question in this report: where are these produce wholesale buyers, what are they looking for, and how do growers connect with them? Is it somehow possible to gather all the produce wholesale buyers who might be interested in sourcing produce from Tennessee into the same room and get them talking about what they need and who they’re willing to buy from?

Unfortunately, such a meeting is unlikely. Producers and others interested in beginning conversations with produce buyers will have to meet the buyers where they are and initiate conversations. A detailed directory of produce buyers, including credit ratings, is maintained in the Red Book Credit Services (RBCS). This listing is available to businesses, individuals and institutions paying the RBCS membership fee. While the membership fees in RBCS are not inexpensive, this is the produce industry’s guide to purchasers and shippers of produce.

The produce industry also has a well-developed series of trade shows and industry groups where buyers and wholesalers regularly gather for meeting and gathering industry data. The Produce Merchandising Association (PMA) holds its Fresh Summit and other regional gatherings throughout the country. These are key forums for those involved in buying and selling produce. Another organization that exists to help connect those in the regional produce industry is the Southeast Produce Council. Connections with produce buyers and others who can help in the market discovery process can be made by the presence of producers or their authorized marketing representatives at such industry gatherings.

<sup>52</sup> Liang, Jing and Jensen, Helen H. “Marketing Agreement, Food Safety and Contract Design.” Selected paper, American Agricultural Economics Association Annual Meeting, Orlando, FL, July 27-29, 2008.  
<http://purl.umn.edu/6434>

The produce business is highly competitive with regard to price, and price can wildly fluctuate based on unpredictable weather and production in key global production areas. Many commodity row-crop producers have recently experienced record high prices and seemingly daily futures price fluctuations to futures limits. But in wholesale produce markets, due to the product's highly perishable nature and concentrated production, such volatility is not unusual and nearly always expected year after year. Therefore, produce buyers have learned to guard themselves against contractors refusing to sell at contracted prices, and who instead take their chances on the spot market. This is one reason why some cooperative marketing efforts for produce crops have failed in nontraditional production areas — producers bypass the volume marketer for higher prices on the spot market. Produce buyers have thus learned to deal with established suppliers, or those suppliers willing to enter contractual agreements to guarantee their production goes to the contracted buyer.

*The relational nature of the produce industry, at all levels of the supply chain, cannot be overstated.*

A second difficulty is that there are two main groups of produce wholesale buyers with different needs, and there are distinctive categories of buyers with different characteristics among these groups. **Retailers** are large chains seeking continuous supply. **Wholesalers** are firms also seeking continuous supply, but wholesalers are in the business of grouping and aggregating produce for shipment and resale.<sup>53</sup> These buyers have distinctly different needs and move in somewhat different circles.

**The relational nature of the produce industry, at all levels of the supply chain, cannot be overstated.**

To successfully access larger markets, newer producers are more likely to align themselves with larger grower-shippers, producer cooperatives, or others who are already in the market and may be seeking to expand their distribution capacity or product variety. Accessing larger-volume produce demand through partnerships with produce marketing firms or existing suppliers is likely the best strategy for expanding product volumes in larger retail outlets. Adherence to production guidelines and safety/audit standards will be essential.

It should be noted that a more recent “kind” of wholesaler in the produce industry has emerged and continues to gain an increased presence in the industry: the certified organic wholesaler or grower-shipper. The needs and marketing requirements for certified organic products are perhaps more specialized, but smaller market volumes may provide more incentive to smaller growers to enter the certified organic supply chain. However, it cannot be emphasized enough that the major produce crops are usually widely available on the wholesale market as both conventional and certified organic options. Unless a producer has a highly specialized product with already demonstrated market demand, the certified organic market will also be difficult to penetrate apart from alliances with existing shippers.

<sup>53</sup> There are also differences between types of wholesale buyers in the produce industry. Some wholesalers are servicing retailers, while other very large wholesalers (such as Sysco) may be serving very large institutional clients. Wholesalers serving very large clients may have attributes of both large retailers and the wholesalers when sourcing produce, as many serving institutional clients have adopted local procurement initiatives.



### *What is the feasibility of a statewide clearinghouse for products/growers?*

Is a statewide clearinghouse for food products feasible? The answer to this is negative thus far, although some efforts have been undertaken toward this end.<sup>54</sup> These efforts obviously require capital investment and considerable planning and coordination. From the scant (mainly anecdotal) evidence available, these efforts appear to be better used for less-perishable products, such as processed or value-added foods. There remains little evidence that such clearinghouse efforts are at all effective for fresh produce crops, particularly outside concentrated population centers.

Clearinghouses, or distribution centers, for fresh produce crops are usually maintained in large production areas by grower-shippers, as well as by individual retail chains. Unless a particular state has an opportunity to develop a highly specialized niche product, a statewide clearinghouse for fresh produce would be unlikely to be competitive against existing wholesale channels.

However, there are some apparent success stories of state or regional efforts toward creating clearinghouses for specialty or “new” products. One example may be Chestnut Growers Inc., a Michigan cooperative of nearly 40 growers producing chestnuts for processing and fresh sale.<sup>55</sup> While the co-op clears and processes both fresh and processed product, it is dealing with a highly specialized product. Such efforts are rarely producer-financed and usually rely on significant public research and development support and, in many cases, grant funding for venture capital.

Statewide clearinghouses for produce crops, as well as other food products, are problematic. But there may be other options for helping producers aggregate and distribute food products. Concentrating resources toward efforts aimed at population centers, as well as efforts focused on particular crops with clearly documented production and market potential, could result in alternative strategies for institutional assistance given to market fresh produce and other farm products.

<sup>54</sup> The best known may be the Oklahoma Food Cooperative, [www.oklahomafood.coop](http://www.oklahomafood.coop).

<sup>55</sup> [www.chestnutgrowersinc.com](http://www.chestnutgrowersinc.com)

## Conclusion

Produce sales in Tennessee have edged down slightly over the past 20 years, failing to keep up with the strong growth in demand for fresh produce nationally. Relatively high labor costs, limitations to wholesale capacity and absence of other marketing institutions have contributed to this result. Although it is not an easy task to reverse major trends and the relative competitive position of a regional industry, several new market conditions are emerging that may suggest selected opportunities for produce growers in Tennessee. The most significant of these conditions is consumer interest in locally grown products and responses to this consumer interest across the produce supply chain.

Despite interest from wholesalers and major retailers in sourcing more local and regional products, commercial-scale produce markets will continue to be challenging. Opportunities for shorter supply chains, however, are in strong demand, as restaurants, grocers and various direct-to-consumer market channels all show strong demand for locally sourced, fresh products. While there are limits to the amount of volume these channels can absorb, they can, if cultivated, create new value.

Auctions, smaller-scale and specialty wholesalers, and even grower associations can play a role in aggregation and distribution, particularly working with smaller-scale producers. Programs like Pick Tennessee Products and Tennessee Farm Fresh with the Tennessee Department of Agriculture can play a facilitating role in connecting local products with local markets, but survey data suggest relatively low producer awareness of these programs. Farm-to-school programs and database matching systems such as MarketMaker can also play a facilitating role connecting local products with local markets, particularly if utilized within a broader research, education and market development strategy.

Larger volume buyers — wholesale, grocery and food service firms primarily managed for cost and volume — will continue to look for selected fresh produce supply deals to fill seasonal needs, minimize shipping costs and take advantage of value available in supply fluctuations. Food safety, quality assurances, supply chain sophistication (traceability) and transparency of farm operations will become increasingly important for both small and larger growers. Tennessee can help producers grow their markets selectively with educational and promotional support through UT Extension, the Department of Agriculture and other agencies.

Industry development takes many partners committed to regular communication about market needs, gathering information for better decision-making and working together to understand various policy implications. There are many issues unique to the various produce market channels. Local food systems development involves different resources, partners and programs than regional and national markets. The produce industry in Tennessee will benefit from grower, buyer and public agency partnerships committed to intentional market development for both local and regional market opportunities.





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