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# Serving as Suppliers to Institutional Foodservices: Supply Chain Considerations of Small and Medium Scale Specialty Crop Producers

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SERVING AS SUPPLIERS TO INSTITUTIONAL FOODSERVICES: SUPPLY  
CHAIN CONSIDERATIONS OF SMALL AND MEDIUM SCALE SPECIALTY  
CROP PRODUCERS

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A Thesis  
Presented to  
the Graduate School of  
Clemson University

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science  
Applied Economics and Statistics

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by  
Laura Westray  
May 2012

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## ABSTRACT

Institutional foodservice, which includes schools, hospitals, and long-term care facilities, is an important food marketing channel. The centralized nature of the US food system effectively, and supply, logistic and other constraints, effectively precludes small and medium scale (SMS) specialty crop producers from serving as suppliers to these types of operations. Passage of The Food Safety Modernization Act (FSMA) and increasing public attention to food safety issues, further complicates this matter. While the FSMA Tester-Hagen Amendment provides regulatory exemptions for SME producers, it is likely that in the future food purchases on or behalf of institutions will require more stringent food safety, traceability and other production practices. Broadly, it is the purpose of this study: (1) to improve understanding of the current barriers which limit the ability of SMS Southeastern specialty crops producers to serve as suppliers to institutional food services; and (2) to identify and document relevant constraints and extension needs of SMS specialty crop producers seeking to implement traceability systems. The geographic area was limited to North Carolina, South Carolina, and Georgia.

This study was undertaken in two Phases. During Phase I, focus group meetings were conducted with SMS specialty crop producers to explore the barriers and challenges they experienced in their efforts to directly market produce directly to institutions. During Phase II, a second series of focus groups were held which focused on traceability and food-safety considerations of supplying this marketing channel. A majority of cited barriers were akin to those identified in previous studies of other regions. Several challenges arose from recent changes to food safety legislation and/or appeared unique to the region. The

requirement of specific product attributes, lack of value-added processing facilities, and insurance and certification requirements, also limited the ability of SMS producers to access this marketing channel. Cost and documentation associated with implementing and maintaining traceability systems, and legal liability were the most cited food-safety challenges. Importantly, possible remedies to these challenges and specific extension needs were also identified. Results will be of interest to those supporting the marketing efforts of specialty crops producers, and other stakeholders in this marketing channel.

## TABLE OF CONTENTS

	Page
TITLE PAGE .....	i
ABSTRACT .....	ii
LIST OF TABLES .....	vii
LIST OF FIGURES .....	viii
ACRONYMS .....	1
CHAPTER	
I. INTRODUCTION .....	2
Overview of Food Safety Modernization Act .....	4
Study Aim and Objectives .....	5
Overview of Thesis .....	6
II. U.S. FOOD MARKETING .....	7
Overview of U.S. Agriculture .....	7
Specialty Crop Production .....	10
Specialty Crop Production U.S. Southeast .....	13
Trends in U.S. Specialty Crop Demand and Marketing .....	14
Organic .....	17
State Marketing Programs .....	18
Institutional Food Demand .....	19
The Farm to Institution Marketing Channel .....	20
Studies Examining Farm to Institutional Market .....	21
Barriers in the Specialty Crop to Institution Marketing Channel .....	23
III. REGULATING AND LEGISLATING THE U.S. FOOD SYSTEM .....	28
Overview of Food Safety Issues .....	28
Costs and Benefits of Improved Food Safety .....	32
U.S. Foodsystem Legislation and Oversight .....	37

## Table of Contents (Continued)

	Page
Motivation for New Legislation.....	39
Food Safety Modernization Act.....	40
Final Contents of Food Safety Modernization Act .....	41
The Tester-Hagan Amendment.....	44
Healthy, Hungry-Free Kids Act of 2010.....	45
Traceability Requirements and Best Practices.....	47
 IV. RESEARCH METHODOLOGY .....	 51
Approaches to Study Food Systems .....	51
Traceability .....	56
Study Methodology.....	59
Focus Group Research Methodology.....	60
 V. RESULTS AND DISCUSSION.....	 70
Characteristics of Respondents .....	70
Barriers in Farm to Institution Marketing.....	74
Results Compared to Existing Literature .....	86
Needs Identified by Small-Medium Scale Specialty Crop Producers.....	89
Solutions to Farm to Institution Marketing Barriers.....	92
On-Farm Traceability Systems Traceability.....	97
Motivation to implement traceability.....	97
Challenges to implementing and maintaining traceability .....	100
Costs to implementing and maintaining traceability .....	105
Implications for the Farm-to-School Marketing Channel .....	107
Implications for Farm-to-Health Care Marketing Channel .....	109
Study Limitations.....	110
 VI. CONCLUSIONS AND FUTURE RESEARCH .....	 112
Recommendations for Future Research .....	114
Future Extension Programs.....	115

Table of Contents (Continued)

	Page
APPENDICES .....	116
A: Recruitment Script.....	117
B: Producer Registration Form.....	120
C: Discussion Guide – Phase I .....	124
D: Discussion Guide – Phase II.....	127
REFERENCES .....	130

## LIST OF TABLES

Table		Page
2.1	Specialty crops as defined by the USDA .....	11
2.2	Rank of southeastern states in specialty crop production among all U.S. states, 2010.....	13
2.3	Direct and indirect marketing channels for specialty crops.....	16
4.1	Focus group meetings: Type and location .....	62
4.2	Potential and final themes used for NVivo 9 coding.....	68
5.1	Focus group specialty crop producer participation by state and conference .....	71
5.2	Focus group specialty crop producer participation by gender.....	71
5.3	Barriers identified in the study as compared to the literature .....	88

## LIST OF FIGURES

Figure	Page
2.1 Total U.S. agricultural sales by production activity in 2007.....	9
2.2 Southeastern U.S. specialty crop international exports, by state in 2010 .....	14
5.1 Farm revenues represented by Phase I and II participants .....	72
5.2 Participant’s specialty crop production, by product .....	73

## ACRONYMS

AMS	Agricultural Marketing Service
ASAP	Appalachian Sustainable Agriculture Project
CACFP	Child and Adult Care Food Program
CDC	Centers for Disease Control and Prevention
CEFS	Center for Environmental Farming Systems
CFIA	Canadian Food Inspection Agency
CFSC	Community Food Security Coalition
CNPP	Center for Nutrition Policy and Promotion
CSA	Community Supported Agricultural
DHHS	Department of Health and Human Services
ERS	Economic Research Service
FAS	Foreign Agricultural Service
FDA	Food and Drug Administration
FNS	Food and Nutrition Services
FRAC	Food Research and Action Center
FSIS	Food Safety and Inspection Services
FSMA	Food Safety Modernization Act
GAPs	Good Agricultural Practices
GMPs	Good Manufacturing Practices
HACCP	Hazard Analysis and Critical Control Points
IRB	Institutional Review Board
NASS	National Agricultural Statistics Service
NCDA&CS	North Carolina Department of Agriculture and Consumer Services
NCSL	National Conference of State Legislatures
NFSMI	National Food Service Management Institute
NGO	Non-Governmental Organization
SCDA	South Carolina Department of Agriculture
SME	Small and Medium Enterprises
USDA	United States Department of Agriculture
WTP	Willingness to Pay

## CHAPTER ONE

### INTRODUCTION

Small and medium enterprises (SME) are important to the health of the U.S. economy; according to the 2007 Census of Agriculture, 91% (1,995,133) of farms in the U.S. are small (USDA, 2009) so it is important to keep these farms sustainable. The United States Department of Agriculture (USDA) defines a “small” farm as selling less than \$250,000 in agricultural products, annually. The sustainability of SMEs are also important in the local economies because of the multiplier effects; SMEs purchase inputs and hire locally. Small farms also account for the majority (56%) of total U.S. value of agricultural products. 57% of direct to consumer sales are from small farms (USDA, 2009).

As of the 2007 Census of Agriculture, specialty crops comprised around 18% of the total value of U.S. agricultural products sold (USDA, 2009). The USDA in the Specialty Crop Competitiveness Act of 2004 defines specialty crops as “fruits and vegetables, tree nuts, dried fruits, and nursery crops” (AMS, 2012a). The southeastern states (Georgia, North Carolina, and South Carolina) are in the top 25 U.S. states for 2010 specialty crop production (NASS, 2010). A large portion (more than 80%) of the farms in the southeast are small (USDA, 2009).

Institutions are large food demanders; institutional foodservice operations include schools, universities, hospitals, prisons, childcare, and long-term care facilities.

Annually, as of 2011, more than 7 billion meals were served, including breakfast, lunch, and snack, to children in kindergarten through 12<sup>th</sup> grade (FNS, 2012b). Not surprisingly, the top three institutional food purchasers are K-12 schools, colleges/universities, and hospitals (Beery and Vallianatos, 2004) because they serve the most meals. In 2010 nearly \$37 billion was spent on food by U.S. schools (including colleges and universities; ERS, 2011c).

Currently, the preferred way for institutional foodservice operations to purchase food is through a distributor, which is driven by the barriers that exist for direct farm to institutional foodservices marketing. The barriers include a multitude of issues, such as seasonality of produce, inadequate quantity, delivery issues, price, and ordering method, etcetera (Izumi et al., 2006; Gregoire, Arendt, and Strohbehn, 2005; Strohbehn and Gregoire, 2002; Peterson, Selfa, and Janke, 2010).

Food safety is an additional barrier (Strohbehn and Gregoire, 2002; Gregoire, Arendt, and Strohbehn, 2005; Izumi et al., 2006) that makes it challenging for small producers to sell directly to institutional foodservices. Food safety is the “guarantee that the food is safe from causing harm” (Holleran, Bredahl, and Zaibet, 1999). Traceability provides a method for quick identification of the source of contamination in the event of unsafe food so that it can be removed from the food chain. Traceability is the “ability to trace the history of a product’s origin including the identity of the farms and the marketing firms along a supply chain” (Pouliot and Sumner, 2008).

Legislation regarding food and food safety in the U.S. dates back to 1820 with the establishment of the U.S. Pharmacopeia and continues to evolve. The motivation for new

legislation is due to the lack of any substantial changes in food safety legislation since the Food, Drug and Cosmetic Act in 1938 (FDA, 2010a) and the frequency of foodborne disease. The Centers for Disease Control and Prevention (CDC) estimate that foodborne disease sickens 1 in 6 Americans (about 48 million each year). Of those sickened, 128,000 are hospitalized and 3,000 die (CDC, 2012).

### **Overview of Food Safety Modernization Act**

The need for new legislation protecting the health and safety of Americans led to the Food Safety Modernization Act (FSMA). President Barack Obama, on January 4, 2011, signed into law the FSMA, which gives authority to the U.S. Food and Drug Administration (FDA) to address food safety hazards for food products that they provide regulatory oversight from farm to table (FDA, 2011a). The FDA is responsible for regulating: biologics, cosmetics, drugs, foods, medical devices, radiation-emitting electronic products, and veterinary products. More specifically, in regards to food, the FDA is responsible for the safety of all food products (except meat and poultry), labeling of food products, and bottled water (FDA, 2009b). FSMA gives the FDA the authority to inspect facilities and mandate recalls in the event of a threat of a foodborne disease (FDA, 2011a).

According to the FSMA, written food safety plans will be required of food production facilities. These plans must document steps to minimize potential food contamination and implementation of preventative controls. Through the passing of the FSMA, the FDA must establish an evidence-based standard for producing and harvesting fruits and vegetables. The standards must address man-made and naturally occurring

risks. Inspections will also be a part of the FDA's responsibility. The frequency with which facilities are inspected will be based on the facilities' risk level. A facilities risk level is identified using six factors as identified in the Act and include such things as known safety risks, a facilities' history of compliance, and a facilities' preventative controls (FDA, 2012). Six hundred (600) foreign food production facilities are to be inspected during the first year. The number inspected every year following will be doubled for five years. Authority is also given to the FDA to mandate recalls on unsafe food in cases where companies do not do so voluntarily. The FDA is also given the authority to track food, imported and domestic, and suspend a food facilities' registration if it is believed to be distributing unsafe food (FDA, 2011b).

Small producers and processors are exempt from the requirements of the Act under the Tester-Hagan Amendment. For a producer or processor to be eligible for exemptions, the value of products sold annually must be less than \$500,000 (calculated using a 3 year average and adjusted for inflation) and sell more than half of all products direct to the consumer within the same state or 275 miles of the operation's location (Tester, 2012). However, many buyers will require their producers to adhere to the traceability requirements, which will exclude small producers and processors from numerous marketing channels.

### **Study Aim and Objectives**

The aim of this study is to explore the direct farm to institutional foodservice marketing channel in regards to small- and medium-scale specialty crop producers in the Southeast. There were two phases of this study. The objective of phase I was to improve

the understanding of the barriers that impact the direct farm to institution marketing channel; specifically, in regard to small- and medium-scale Southeastern U.S. specialty crop producers. The objective of Phase II was to identify the challenges and extension needs of small- and medium-scale specialty crop producers in relation to institutional traceability requirements. The region of interest was limited to North Carolina, South Carolina, and Georgia because of the similar challenges and opportunities in specialty crop production with respect to distribution channels.

### **Overview of Thesis**

The organization of this thesis is as follows. Chapter 2 provides a discussion of food marketing in the U.S. and explores the food system, as a whole, and more specifically the Southeastern region of the U.S. The chapter also includes a discussion of the trends in U.S. specialty crop production and concludes with a look at the known barriers in the direct farm to institutional foodservice marketing channel. Chapter 3 reviews food safety legislation in the U.S., provides a discussion of the motivation for new legislation, and concludes with an exploration into the FSMA. Chapter 4 reviews the methodology used in this project. This chapter will specifically explain the site selection, recruitment and moderation process, and the organization and analysis of the qualitative data. Chapter 5 provides the study results of Phases I and II. Conclusions and future research are then discussed in Chapter 6.

## CHAPTER TWO

### U.S. FOOD MARKETING

This chapter focuses on U.S. food production and marketing; in particular, specialty crop production in the U.S. Southeastern region is examined. Secondly, the marketing channel between producers and institutional foodservice operations is explored with emphasis on the potential for a direct marketing relationship between small and medium enterprises (SME) and institutional foodservices. The barriers to this potential marketing channel, as identified in previous studies, are also reviewed

#### **Overview of U.S. Agriculture**

Agriculture is “the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products” (Merriam-Webster, 2012). Agriculture has had a historically significant and a changing role in the U.S. economy. By way of example, historically, agriculture has had an important and significant role as a source of rural employment. In the year 1900, agriculture employed 41 percent of the workforce. However, by 1945 the percentage decreased to 16 percent, and by the year 2000 less than two percent of the labor force was employed in agriculture (Dimitri, Effland, and Conklin, 2005). Agriculture production or farming activities, as a share of total GDP, has also significantly changed over time. In 1930 agriculture generated 7.7 percent of the total GDP, but decreased to 6.8 percent in 1945, 2.3 percent in 1970, and 0.7 percent in 2002

(Dimitri, Effland, and Conklin, 2005). Currently, agriculture generates around one percent of total GDP (Dimitri, Effland, and Conklin, 2005; O'Donoghue et al., 2011d). In 2010, the food market system supplied about \$1.24 trillion of food (ERS, 2011).

Importantly as well, agriculture has a significant impact on the allocation and use of land resources in the U.S. As of 2007, however, more than 50 percent (1.163 billion acres) of total U.S. land area was used for agricultural purposes (O'Donoghue et al., 2011). Of this, cropland made up 35 percent (408 million acres), and grassland, pasture, and range used for grazing consist of 614 million agricultural land use acres (O'Donoghue et al., 2011).

Figure 2.1 displays the total sales in 2007 for the main agricultural production activities (USDA, 2009). Grain and oilseed farming account for the largest percentage of total U.S. agricultural sales. A majority of this production located in the midwestern portion of the country. Corn is the largest seller, contributing to more than 50 percent of grain and oilseed sales. Cattle production is the second largest portion of total U.S. agricultural sales with Texas, Kansas, and Nebraska leading in cattle and calf sales. The sale of poultry and egg products mainly originates from the southeast where Georgia and North Carolina are leading producers. California leads the nation in fruit sales with almost 60 percent of the U.S. total sales of fruits, nuts and berries. California also has the majority (98%) of U.S. tree nut acreage in almonds, pistachios, and walnuts; other tree nut production (i.e. pecans) is found in Texas, Oklahoma, and Georgia (USDA, 2009).

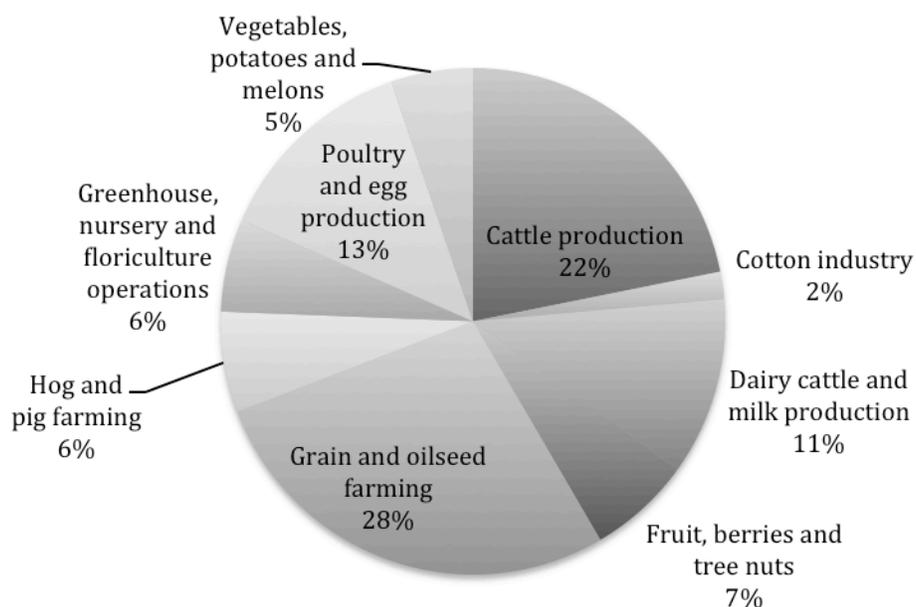


Figure 2.1 Total U.S. agricultural sales by production activity in 2007

The marketing of agricultural products in the U.S. is also a crucial component of the U.S. agricultural system. Agricultural marketing is “defined as the commercial functions involved in transferring goods from producer to consumer” (Penn State, 2012). Marketing includes everything from the labor to the advertising (Penn State, 2012). The ERS, through the analysis of a dollar spent on food and the distribution of the dollar throughout the supply chain, is able to put a dollar amount to U.S. food marketing (ERS, 2011b). ERS breaks food expenditures into food-at-home and food away-from-home categories. In 2010, nearly 48% of total food expenditures were spent on food away from home while 52% was spent on food at home. ERS reported that in 2008 on average the farm share was 15.8 cents of a dollar for all domestically produced food. This result, however, varied considerably dependent upon where the food was prepared. For away-

from-home food; in this case the farm share of the dollar that is less than five cents because of increased foodservice costs. Food-at-home spending has remained relatively constant; in this case farm production accounts for approximately 23 cents of a food dollar (ERS, 2011a).

### **Specialty Crop Production**

Specialty crops are “fruits and vegetables, tree nuts, dried fruits, and nursery crops” (AMS, 2012a). These products have an important role in human health and a critical part of a well-balanced diet. The USDA and the Department of Health and Human Services (DHHS) recommend three to five servings daily of vegetables and two to four servings of fruit each day (CNPP, 2012). Further, specialty crops are important to the US agricultural economy. Due to the care needed in their production and handling, specialty crops provides an important source of employment and they account for more than \$50 billion in annual sales (Martin, 2009). Table 2.1 more specifically describes specialty crops as defined by the USDA. ERS estimates a growth in aggregate market for these products between 2000 and 2020. In particular, the demand for citrus and apples is expected to increase by 27 percent, lettuce and grapes to experience a 24 percent growth rate, and other fruits a 26 percent increase in demand (Lin, 2004).

Table 2.1 Specialty crops as defined by the USDA

Vegetables		Fruits and Berries		Nuts	Nursery Crops
Artichokes	Kale	Apples	Pomegranates	Almonds	Aquatic Plants
Asparagus	Lettuce (head, leaf, romaine)	Apricots	Grapefruit	Chestnuts	Bulbs, corms, rhizomes, and tubers
Beans (green limas and snap)	Mustard Greens	Avocado	Kumquats	Hazelnuts	Cuttings, seedlings, liners, and plugs
Beets	Okra	Bananas	Lemons	Macadamia Nuts	Floriculture Crops
Broccoli	Onions (dry and green)	Cherries (sweet and tart)	Limes	Pecans	Flower seeds
Brussels sprouts	Parsley	Coffee	Oranges	Pistachios	Greenhouse fruits and berries
Cabbage (Chinese, head, and mustard)	Peas (Chinese, green, and green southern)	Dates	Valencia Oranges	Walnuts	Greenhouse vegetables & fresh cut herbs
Cantaloupes	Peppers (excluding Bell)	Figs	Tangelos		Mushrooms
Carrots	Potatoes	Grapes	Tangerines		Mushroom spawn
Cauliflower	Pumpkins	Guavas	Temples		Nursery stock
Celery	Radishes	Kiwifruit	Blueberries (tame and wild) and Dewberries		Sod harvested
Chicory	Rhubarb	Mangoes	Boysenberries		Tobacco plants sold for transplant
Collards	Spinach	Nectarine	Cranberries		Vegetable seeds
Cucumbers & Pickles	Squash (summer and winter)	Olives	Currants		Vegetable transplants
Daikon	Sweet Corn	Papayas	Loganberries		
Eggplant	Sweet Potatoes	Passion Fruit	Raspberries		
Escarole/ Endive	Tomatoes in the open	Peaches	Strawberries		
Garlic	Turnips	Pears			
Ginseng	Turnip Greens	Persimmons			
Herbs (fresh cut)	Watercress	Plums and Prunes			
Honeydew melons	Watermelons	Pluots			
Horseradish					

Source: USDA, 2009

Small sized farms dominate U.S. specialty crop production. The 2007 Census of Agriculture reported that the majority of vegetable and melon farms were small and individually owned. Around 75 percent of vegetable and melon farms in the U.S. harvest less than 15 acres. However, around 90 percent of vegetables and melons that are marketed by growers come from large, commercial farms (ERS, 2011e). According to the 2007 Census, the same was true for fruit and tree nut farms with small, individually owned farms leading production and a few large, commercially owned farms meeting the consumers' demand (ERS, 2011e).

Fruits, tree nuts and berries are produced on more than 112,000 U.S. farms and were valued at more than \$18 billion, according to the 2007 Census of Agriculture. Combined, these products account for around 6 percent (five million acres) of the agricultural products sold in the U.S. in 2007. The majority of non-citrus orchard acreage in the US is made up of grapes (almost half) and apples (~20%). Citrus producing farms declined by 12 percent between the 2002 and 2007 (USDA, 2009). Berry production is focused in strawberries and blueberries and is concentrated on approximately 25,000 farms, which have more than 260,000 acres in production as of 2007. Tree nut production occupies nearly two million acres of land with almonds and pecans as the major crops (USDA, 2009).

Overall the U.S. has a negative trade balance (is a net importer) with regard to specialty crops. The majority of specialty crops produced in the U.S. are grown and consumed domestically. Consumers demand a wide variety of specialty crops year round which contributes to the notable need to import these products despite the considerable

domestic production of them. In 2005 the U.S. imported more than two million dollars of fresh vegetables and melons. The U.S. is an important exporter of specialty crops as well. In particular, the U.S. is a significant exporter of tree nuts (approximately 20 percent of domestic production in 2006). In 2006 the U.S. exported the majority of the almond (77%), walnut (43%) and pistachio (59%) supply (Paggi, 2007). One-third of all fresh fruit exports go to Canada. Canada is also leading in the demand for U.S. exports of frozen, canned, and dried fruits. Mexico, Japan, Hong Kong, Taiwan, and South Korea also demand U.S. exports of fresh fruit (ERS, 2011e).

*Specialty Crop Production U.S. Southeast*

The southeastern region of the U.S. is a major production area for specialty crops. For the purposes of this study the “southeastern region” refers to Georgia, North Carolina, and South Carolina. Table 2.3 displays the ranking of each these states relative to other states’ specialty crop production.

Table 2.2 Rank of southeastern states in specialty crop production among all U.S. states, 2010

<b>Commodity</b>	<b>Georgia</b>	<b>North Carolina</b>	<b>South Carolina</b>
Vegetables, melons, potatoes and sweet potatoes	6	12	19
Fruits, tree nuts, and berries	9	17	20
Nursery, greenhouse, floriculture, and sod	15	7	22

*Source:* NASS, 2010

In their production of some products, Georgia and North Carolina both rank among the top ten states in the nation. Overall, across all types of specialty crop production all three states fall within the top 25 in their production.

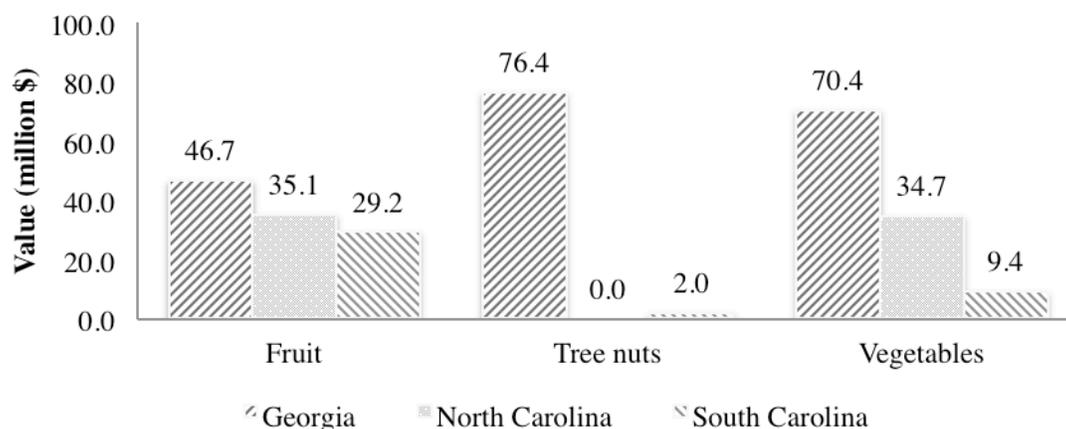


Figure 2.2 Southeastern U.S. specialty crop international exports, by state in 2010

Figure 2.2 depicts the value of international exports of specialty crops originating from the southeastern region in 2010 (ERS, 2010). Georgia leads the region in the value of international exports for fruits, tree nuts, and vegetables. North Carolina also exports a notable amount of fruits and vegetables.

### Trends in U.S. Specialty Crop Demand and Marketing

On average, U.S. individuals and families spend 9.5 percent of their disposable income on food (ERS, 2011c). While the proportion of income dedicated to food has decreased over time, what that money has been used to purchase has also been changing. Meat (41%), sweeteners (39%), and refined carbohydrates (29%) saw similarly notable

increases in their per capita consumption over the last several decades (1970 to 2000). Likewise, during this period cheese the average annual consumption increased 287 percent. In contrast, however, fruits and vegetable consumption only increased 20 percent over the same period (USDA, 2002).

ERS (2011d) reported that a typical American consumes annually around 270 pounds of fresh and processed fruits and tree nuts. In regards to per capita consumption, dairy products and vegetables are the largest food group consumed, followed by fruits and tree nuts at third. Oranges, grapes, apples, and bananas are the highest demanded fruits and almonds, walnuts, and pecans are the most commonly demanded tree nuts.

Several other trends are also supporting the demand for specialty crops. In recent years there has been increased consumer interest in purchasing of locally grown fruits and vegetables. Many of the local farms fall into the SME category. The trend is to support the local, SME farms and to build a relationship between the producer and the consumer. However, the definition of what is local is different for different consumers. Peterson, Selfa, and Janke (2010) surveyed producers in Kansas, which defined local as being within 60 miles of their farm's location. Gallons et al. (1997) and Brown (2003) also found in their studies that locally grown was defined by the region it was grown in and not the state.

Interviews with 530 in urban and suburban locations of Columbus, Ohio were conducted between August 2005 and January 2006. The interviews were conducted with shoppers at direct markets (farmer's markets and farm markets) and indirect markets (grocery stores). The customers cited their reasons for purchasing locally to be freshness,

support for local business, and taste. The consumers also cited a willingness to pay a premium for locally grown berries, 64 cents in grocery stores for strawberries and \$1.17 more at a direct market (Darby et al., 2006). Another willingness to pay study, focused on South Carolina consumers' preferences for state-grown produce, was conducted in March 2007. A survey of 500 participants found that SC residents were willing to pay a 27 percent premium for state-grown produce. The study also found that producers who labeled their product as "SC grown", the state marketing program, increased the value of their products (Carpio and Isengildina-Massa, 2009).

Producers of specialty crops can either sell their products through direct or indirect marketing channels. Direct marketing involves the producer selling direct to the final consumer; whereas, indirect marketing goes through additional handlers before reaching the final consumer. Table 3.3 displays the different direct and indirect marketing options.

Table 2.3 Direct and indirect marketing channels for specialty crops

<b>Direct Marketing</b>	<b>Indirect Marketing</b>
Farmer's Market	Wholesaler/Broker
Roadside Stands	Marketing Cooperative
Community Supported Agriculture (CSA)	Institutional Foodservices
Internet	

Farmers markets are a direct marketing channel that links the specialty crop producers and consumers. As of 2011 there were more than 7,000 farmers markets in operation across the country (AMS, 2011). Between 2010 and 2011 alone there was a 17% increase in the number of farmers markets in the U.S. Farmers markets have become

a way for small- and medium- scale producers to sell their local produce to the community (AMS, 2011). Roadside stands are a marketing channel that facilitates a consumer going directly to a farmer for the purchasing of specialty crops. Community-supported agriculture (CSA) is another type of direct marketing that has gained consumer appeal. With a CSA a consumer purchases in advance shares of the production and then receives product deliveries on a regular basis during the growing season. (AMS, 2010) In the 1990s, the Agricultural Marketing Service (AMS) estimated there were only around 60 CSAs, but by 2010 the number of these groups had expanded to around 3,600 (AMS, 2010).

### *Organic*

According to the USDA, “organic is a labeling term that indicates that the food or other agricultural product has been produced through approved methods that integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity” (AMS, 2012b). As of 2012, approximately 30,000 operations around the world are certified organic (AMS, 2012b). Due to the attention to detail necessary in specialty crop production, organic production is more in line with specialty crops. As of 1997 there was less than 0.2% percent of grain crops that were grown organically, but one to two percent (depending upon product) of specialty crop production that was grown organically. By the year 2000, of all organically produced goods, fresh fruits and vegetables account for 42 percent and are the number one selling category in organics (Dimitri and Greene, 2000). Lettuce, tomatoes, and carrots were the top organic vegetables and grapes, tree nuts, and citrus were the top

fruits in 2005. The direct marketing outlets are nearly identical between specialty crops and organic specialty crops. Organic food retail sales in the U.S. were \$21 billion in 2008. Organic, fresh produce is available to consumers through farmers markets, CSAs, supermarkets, and club stores (Dimitri and Oberholtzer, 2009).

### *State Marketing Programs*

Numerous states have individual marketing programs and some have more than one. For example, South Carolina has Certified South Carolina Grown™ and Fresh on the Menu™ branding programs to promote the purchase of products from South Carolina. Similar programs exist in North Carolina with North Carolina Farm Fresh™, Goodness Grows in North Carolina™, and Certified Roadside Stands™; and Georgia which supports the Georgia Grown™ program. The goal of the marketing programs is to bring together all of those involved in the supply chain and facilitate research of the marketing system. Programs are funded through the State Departments of Agriculture and the USDA.

A partnership between North Carolina Department of Agriculture and Consumer Services (NCDA&CS) and NC State University brought about the Specialty Crops Program that is helping local producers expand their production and connect with new buyers. This program aids producers in expanding production into such things as medical herbs and personal sized watermelons (Davis, 2010).

In South Carolina, there are similar projects going on to assist their specialty crop producers. South Carolina hosts trade shows to expand the South Carolina Department of Agriculture (SCDA) Certified SC Grown™ branding program. The Fresh on the

Menu™ program also promotes the purchase of S.C. grown produce by providing marketing support for restaurants that 25 percent of their menu items include South Carolina grown products (SCDA, 2011). The SCDA website shows there are 355 Fresh on the Menu™ participants as of April 2012 (SCDA, 2012).

### *Institutional Food Demand*

The demand for specialty produce from SME producers in institutions is increasing across the country. Institutional foodservice markets are comprised of schools, universities, hospitals, prisons, childcare, and long-term care facilities. The top three institutional food purchasers are K-12 (grades kindergarten through 12<sup>th</sup>) schools, colleges/universities, and hospitals (Beery and Vallianatos, 2004). As of 2011, more than 7 billion meals are annually served by institutional foodservices, including breakfast, lunch, and snacks, to children in kindergarten through 12<sup>th</sup> grade (FNS, 2012b). In 2006, close to \$31 billion was spent on food by U.S. schools (including colleges and universities); other institutional buyers (hospitals, prisons, etc.) spent around \$43 billion (CEFS, 2011).

To illustrate, what an American public school district spends on fresh fruits and vegetables, it is useful to review numbers published from a study of Minnesota school districts of varying sizes. One district, St. Paul, spends around \$400,000 on fruits and vegetables (fresh and processed) annually and serves 41,000 students. Almost 90% of the fruit and vegetables that are purchased have had some type of value-added processing. The St. Paul school district has an annual food budget for purchasing of around \$4.4 million. The Minnesota study also looked at a smaller district in the state that only has

9,000 students and spends 10% of the annual food budget (around \$165,000) on fresh fruits and vegetables. Most of Minnesota's public schools purchased the majority of their food commercially and the other ten to fifteen percent was from USDA commodities (Berkenkamp, 2006). Ninety-four thousand (94,000) public and private U.S. schools receive food commodities through the USDA Food Distribution Division of the USDA's Food and Nutrition Service (FNS, 2009).

Prisons and hospitals commonly use a ready-prepared foodservice system in which food is prepared onsite, and then it is frozen or chilled until the food is reheated and served (NFSMI, 2012). In 2004, hospitals spent \$3.3 billion on food expenditures (Beery and Vallianatos, 2004). The prison system is also an important source of institutional food demand with more than one and a half million state and federal prisoners incarcerated in 2009 (Sabol and West, 2011). Long-term care facilities also feed around one and a half million residents, annually (CDC, 2011). As of 2004, there were more than 16,000 long-term care facilities in the U.S., with the average stay of a resident being 835 days (CDC, 2011).

#### *The Farm to Institution Marketing Channel*

Currently, the preferred way for institutions to purchase food is through a distributor. This is because of the barriers that are discussed in the last section of this chapter on the direct farm to institutional marketing channel. Distributors allow for ease in product procurement for institutional purchasing due to their ability to offer a wide range of products including options in value-added processing (pre-cut, pre-washed, bagged, etc.), delivery and billing options, and minimization of uncertainty.

School meals are big business, estimated at over \$10 billion per year spent by school food buyers. Previously this was a hard market for SME farmers to break into, but through the creation of the Farm to School program farmers are now being connected with institutions. The benefits are not just to the farmers and the local economy, but also to the students and educators through the added educational opportunities (National Farm to School Network, 2011). Farm to School serves the purpose of “improving student nutrition, providing agriculture, health and nutrition education opportunities, and supporting local and regional farmers” (National Farm to School Network, 2011).

In North Carolina, Duke University established the LIVE FOR LIFE® program in 1989. The program provides its employees with resources such as fitness programs, health assessments, and assistance in quitting smoking. The health assessments revealed that many of their employees were not consuming the daily-recommended value of fruits, vegetables, and fiber so Duke University began a farmers market on Fridays (each week during the spring and every other week during the summer). Upwards of 600 consumers are buying from nine to twelve farmers at the farmers market. While Duke University was the first to have a hospital farmers market, the idea has since spread across the country (Beery and Vallianatos, 2004).

### **Studies Examining Farm to Institutional Market**

Benefits and obstacles are revealed in studies from the literature that examine the farm to institution marketing channel. Peterson, Selfa, and Janke (2010) mailed a survey to 1,669 producers in northeastern Kansas with a response rate of 14.7%. A survey was also emailed to 121 institutional foodservice buyers with a response rate of 29.8%. The

majority of producer survey responses were from producers of products that fall under the specialty crop category (fresh vegetables and fresh fruits) and the majority of respondents gross farm sales were under \$10,000, annually. Institutional buyer respondents included buyers for group housing, school districts, daycare, retirement homes, universities, restaurants, and senior centers. 47% of the buyers had experience purchasing directly from a farmer and of those with experience they felt that local foods were, on average, of a higher quality, compared to similar non-locally purchased products (Peterson, Selfa, and Janke, 2010).

Gregoire, Arendt, and Strohbehn (2005) mailed a survey to 560 Iowa producers and received a response rate of 35%. The majority of responses were from producers of products that fall under the category of specialty crops. Out of the 560 producers, 30% (n=54) of the producers sold direct to restaurants or institutional foodservices. The top two reasons for not selling to a local foodservice buyer were inadequate quantity and non-receptive buyers. From the producer point of view, the top benefits of direct marketing are support for the local farmer, fresher product, and the food travels a shorter distance (Gregoire, Arendt, and Strohbehn, 2005).

A mailed survey was used to collect data from institutional and restaurant food buyers in Iowa between July and December of 2000 to explore the benefits and barriers of purchasing locally. Questions were focused on the purchasing of locally grown food without a mention of the size of farms in which the buyers were purchasing. 39% of the 170 institutions that were surveyed responded. According to the institutional buyers, the top 3 benefits of local purchasing were fresher food, good public relations, and purchase

small quantities. The top 3 barriers were found to be year-round availability, local and state regulations, and working with multiple vendors (Strohbehn and Gregoire, 2002).

A study focusing on the Farm-to-School program used interviews to gain an insight into the perspective of the institutional foodservice buyers. This was done through semistructured interviews with 7 school foodservice professionals, 7 farmers, and 4 food distributors from 7 Farm-to-School programs located in the midwest and northeast US. It was found that the reason foodservice buyers want to purchase directly from the farmer is because of student preference, lower price, and to support the local farmer (Izumi et al., 2010). This contrasts some of the barriers that are cited in other studies that cite price as a barrier.

### **Barriers in the Specialty Crop to Institution Marketing Channel**

Literature describes numerous barriers impeding the success of the farm-to-institution marketing channel. These barriers were identified as constraints in studies describing the perspective of either producers, institutional buyers or both. Briefly, some of the most frequently cited challenges to this marketing channel include inadequate quantity, seasonality of produce, delivery challenges, payment arrangements, price, insufficient/inadequate infrastructure, difficulty finding and communicating with buyer (Gregoire, Arendt, and Strohbehn, 2005; Peterson, Selfa, and Janke, 2010), and insurance (Peterson, Selfa, and Janke, 2010). These factors are further examined in the following discussion.

A barrier for several SME producers is the requirement that some buyers have on their suppliers of an insurance policy or requirements of specific handling practices or

traceability. This can be a barrier because of the high cost to purchase an insurance policy or the high cost of implementing and maintaining certain types of handling practices (i.e., HACCP or GAPs; Berkenkamp, 2006). There is also the issue of scale and the inability of one small producer to produce the amount an institution desires to purchase (McLeay and Barron, 2006). Some buyers do not wish to deal with smaller quantities that the SME producers provide and want to receive their products on pallets instead of by the case (Berkenkamp, 2006).

The ability to provide produce year-round is a barrier that is repeatedly identified in the literature (Berkenkamp, 2006; McLeay and Barron, 2006; Peterson, Selfa, and Janke, 2010; Gregoire, Arendt, and Strohbehn, 2005). A Montana study found that the climate conditions of the area make it difficult to supply all that is demanded, and the inability of most farms in the U.S. to grow year-round make purchasing from a SME difficult (McLeay and Barron, 2006). Some institutions are finding ways to remedy this problem. For example, a Minnesota school district tried serving cucumbers from a local, SME farm at their high school salad bars for one month. The effort was well received for their school district and efforts to serve produce from local, SME producers was continued, and each school served acorn squash and apples once a month. However, in this case, it is important to note, the school district did not purchase directly from the producer but instead from a distributor (Berkenkamp, 2006).

Hospitals and long-term care facilities are also finding ways to deal with the seasonality barrier through the creation of seasonal menus (Health Care Without Harm, 2011). Storage is another way to remedy the seasonality barrier. Some products, such as

potatoes, can be stored for months at a time. This does not mean that storage is the answer to all seasonality issues; storable fruits and vegetables have to have a location and facility to be stored for months and not all fruits and vegetables can be stored (McLeay and Barron, 2006). Another seasonality related barrier for educational institutions that does not affect long-term care facilities and hospitals is that the months when the majority of fresh fruits and vegetables are in season are the months in which schools are not in session. Only a few months of the year when school is in session (typically September through May) are suitable for fresh fruit and vegetable production in most parts of the country (Berkenkamp, 2006). However, seasonality of supply in many U.S. locations is limited to spring and summer, typically April through September.

In addition to producer constraints to serving as suppliers to institutions, characteristics of the institutions themselves also limit the ability of these organizations to procure produce from SME producers. One study found that institutions experience seasonality of demand, low budget constraints, and contract issues (Bellows, Doufour, and Bachmann, 2003). A Wisconsin study found procurement to be the least difficult barrier to handle due to the fact that in most school districts contracts require 80 percent of food purchases to be from a national distributor, but 20 percent can be from a non-national distributor so it did not prove to be very difficult to purchase from smaller suppliers such as an independent co-operative (Kloppenburger, Wubben, and Grunes, 2008).

It was reported in a Minnesota study that buyers who had experience with purchasing from SME or local producers complained about delivery problems and quality control. Some buyers reported that the products were not delivered at the agreed upon

date and time and there was no consistency in the size of fresh produce (Berkenkamp, 2006). This leads to another barrier within the farm to institutions marketing channel, which is processing and the lack of infrastructure. Most institutions, especially school districts, want to purchase their fruits and vegetables in a ready-to-eat form, such as pre-washed, cut, and bagged. Unfortunately, most SME producers do not have access to commercial kitchens to prepare their products for sale to institutions (McLeay and Barron, 2006).

Throughout the literature, the price of purchasing produce from SME's was not clearly a barrier or benefit. In some cases, it was reported that pricing was a barrier; a Wisconsin study that found that the local, SME producers were selling high-end organic produce that was restaurant quality so the price was too high for institutions (Kloppenburger, Wubben, and Grunes, 2008). This was also found in the Hopkins, Minnesota school district study in which institutional buyers were trying to purchase a specific type of apple that was of a particular size. However, the producers were growing a larger product which was in high demand within grocery stores and restaurants, so the price was higher (Berkenkamp, 2006). This can be seen as a barrier because the budget for an institutional foodservice buyer is tighter, in most cases, than the budget of a grocery store or restaurant, which makes it difficult for the institutional buyer to source from this subset of producers.

Peterson, Selfa, and Janke (2010) collected information on the barriers from the producers' point of view, but surveys were also emailed to institutional buyers. The institutional buyer survey was administered online between February and April of 2009;

emails were sent to 121 buyers and generated a response rate of 29.8%. The majority of respondents were buyers for group housing and school districts. The most commonly cited barriers by buyers were difficulty finding local producers, price, inconsistent/inadequate supply, lack of prior experience purchasing direct from producers, and delivery concerns (Peterson, Selfa, and Janke, 2010).

## CHAPTER THREE

### REGULATING AND LEGISLATING THE U.S. FOOD SYSTEM

Although small and medium enterprises (SME) are exempt under the Tester-Hagan Amendment, from the traceability requirements in the Food Safety Modernization Act (FSMA), some SMEs are still going to face challenges due to the demands of buyers, particularly institutional buyers. This chapter begins with a discussion of the food safety issues facing consumers and producers and then a discussion of the costs and benefits of implementing a traceability system. This is followed by a review of past food legislation and moves into the current legislation, specifically the FSMA and the Tester-Hagan Amendment. There is also a discussion of the Healthy, Hungry-Free Kids Act that encourages the consumption of fresh fruits and vegetables. The chapter is concluded with a look at traceability requirements and best practices.

#### **Overview of Food Safety Issues**

Food safety is the “guarantee that the food is safe from causing harm” (Holleran, Bredahl, and Zaibet, 1999). The goal of food safety legislation is to provide a higher quality product that is of a lower risk to consumers. The level of risk a consumer is willing to assume “depends on income, prices, the objective risk associated with the food, the perceived risk of the food, the likelihood that an individual will be exposed to the risk, and the individual’s susceptibility to the risk” (Antle, 1999). Consumers thus face a trade-off between the price and the amount of risk they are willing to assume when

making food purchases (Antle, 1999). A limitation of this type of study is the consumers' lack of understanding of risk (Haynes et al., 1995).

Information asymmetry is a problem with providing food safety because the producer has more knowledge about their product than the consumer (Hobbs, 2003; Ritson and Mai, 1998). Food safety is not an attribute that can be assessed by the consumer in the same way that color or size can be; in this case the consumer has to rely on the information provided by the producer or seller (Hobbs, 2003; Ritson and Mai, 1998). Traceability has been introduced as a resolution to the information asymmetry between producers and buyers. Traceability provides verification for the producer that steps were taken to decrease the potential for contamination of their product (Hobbs, 2003). Unlike search goods in which the consumer can visually inspect and determine the desired attribute, food safety is an experience good for which the characteristic of the food product is only known after consumption. For example, if the consumer were to get sick from a foodborne disease. In some cases a food product becomes a credence good in which the attribute is not known even after consumption (Darby and Karni, 1973; Nelson, 1970).

Studies by Yapp and Fairman (2004, 2006) examine the need for incentives to encourage compliance with food safety regulations. A strategy that has encouraged compliance of retail and foodservice chains to adhering to food safety standards is the "scores on doors" approach in which a business' inspection results are posted in a prominent location on the business premises. Publishing recall information ("naming and shaming") can have analogous business reputation implications and thus can also be used

as a form of enforcement. Penalties for not (sufficiently) adhering to food safety standards and regulations vary for the size of the firm that is being penalized. Canada has food safety regulations of this type with the average monetary fine being CAN\$6565 (CFIA, 2004). For smaller firms a financial penalty will be the most damaging, but for a large firm a financial penalty will not have the same effects as bad publicity. For large firms bad publicity can damage the reputation of the product and company (Martinez et al., 2007).

As an alternative to the deterrent-based strategies discussed above, food safety can be encouraged through a compliance-based enforcement system. This approach has been adopted to help ensure food safety in several countries including the United Kingdom and Canada. By way of example, in the U.K. inspections are used to help prevent a harmful event from occurring, and enforcement officers encourage compliance and promote best practices. For those who opt not to comply with standards, a hierarchy system for penalties, in which consequences of non-compliance become progressively larger, is in place. The penalties range from an improvement notice to prosecution. In the U.K., food safety legislation non-compliance is occasionally considered a criminal offense and can result in financial penalties and/or imprisonment (Martinez et al., 2007).

The need to maintain food safety, even for SMEs, is critical as seen in a 2003 hepatitis A outbreak in Mexico. An international outbreak that affected the U.S. occurred with hepatitis A being contracted from consuming raw or undercooked green onions imported from Mexico. The majority of green onions consumed in the U.S. are imported from Mexico because green onions are a labor-intensive product that is cheaper to

produce in Mexico. Due to green onions requiring more labor the potential for microbial contamination is increased. According to an article by the USDA (2004b), a green onion can be touched by up to nine people during harvesting and packing. In November of 2003, hepatitis A outbreaks in Tennessee, North Carolina, and Georgia were announced and were linked with raw or undercooked green onions. The FDA began investigating and linked the outbreak to four Mexican firms. These four firms represented only a very small portion of the summer Mexican green onion production, but their lack of food safety practices caused the entire Mexican green onion industry to suffer and compromise the safety of U.S. consumers (USDA, 2004).

Many of the Mexican green onion growers were already good agricultural practices (GAPs) and good manufacturing practices (GMPs) certified but still had to face the consequences of four small growers. Unfortunately, the Mexican green onion industry was not the only one to be affected. The hepatitis A outbreak caused the demand in the U.S. for Mexican green onions to decrease. The National Restaurant Association advised all members against using any Mexican green onions and many retailers removed green onions from the shelves completely. Green onions are not a necessity so buyers had the ability to substitute regular onions (USDA, 2004). If all producers are not in compliance with the voluntary measures then the risk is not eliminated and all producers could be held accountable in the event of an outbreak. This is an example of what can happen when there are not mandatory regulations.

### *Costs and Benefits of Improved Food Safety*

The information cost, of time and money, to a consumer that highly values food safety, can be very high as it can be difficult to discern the safety of food. The literature offers some insight into the ways in which this problem can be reduced. One study outlines three remedies: firm-level response in which the firms label their products; legislative protection in which there are labeling requirements and standards for pathogen-reduction; and allowance of tort liability law that will hold firms legally liable for any wrong-doing that leads to a food safety problem. The difficulty with tort liability law will be the determination of the firm at fault (Loader and Hobbs, 1999). Ritson and Mai (1998) also found cases of information asymmetry, and identified government regulation and legislation remedies. The purpose of using government regulation as a solution is to keep producers from falsifying information. Food safety legislation offers a partial solution in that it requires products be properly labeled so the correct information is provided to consumers. The effectiveness of this in bridging information asymmetry is limited because it is only effective if the consumer understands what is printed on the label. If a consumer does not understand what the label states then the goal of reducing the cost, time and money, of obtaining information is not achieved (Loader and Hobbs, 1999).

It is also worth emphasizing that food safety is a public good. A public good is a good or service that provides a benefit to all individuals instead of a single individual. The benefits of improved food safety standards and processes cannot be limited to a single group of customers who are willing to pay for this product attribute. In this case it

is necessary to determine the optimal level of food safety to supply and that is determined through a cost benefit analysis (Ritson and Mai, 1998).

Further, many benefits of implementing improved food safety practices are realized in the form of cost savings (i.e. minimized recall or loss of consumer goodwill due to a food safety event), and even then are not noticed until after an event has occurred. Further, contrary to the normal assumptions about production cost behavior, when dealing with food safety, the marginal cost of food safety increases with the requirement of food safety. Typical production behavior would lead one to believe the marginal cost should decrease as the amount of food safety is increased, but elimination of all risk is extremely costly (Ritson and Mai, 1998).

The costs of food safety have two components: the direct costs that will fall onto the producers/consumers, and the social cost of food safety event risk that is not directly accrued to a given consumer or producer but is instead born by society as a whole (i.e. health care costs). Direct costs include the fixed and variable cost of compliance such as equipment and facility investments and employee training to adhere to and document food safety practices. Social costs involve both tangible and intangible costs. Tangible costs involve those costs that can have a direct monetary value. In the event of a foodborne disease outbreak, such tangible costs could include medical bills, loss of employment, and cost of cleanup, loss of product. Intangible costs are not easily or accurately monetized and include items such as the loss of time or, in some cases, loss of life (Henson and Traill, 1993). It is worth noting that social costs can also be incurred in response to new or modified regulations or legislation. Compliance with regulation

changes may require a change in the cost function of a firm due to the need to invest in new or modified equipment or facilities (Antle, 1999). Dependent upon the opportunity costs of making these changes, the firm may choose to close or relocate. Due to economic linkages this, in turn, could have a significant impact on employment and consequently spending, the tax base and many other facets of the local economy and social capital (Hoffmann, 2010).

For some growers the costs to get their farm into compliance can be extremely high. For example, to become GAPs certified it can be extremely costly for some producers to make the necessary upgrades to the farm and then there is the cost of inspection, which may be based on an hourly rate based on the inspector's time on the farm and travel (USDA, 2004). The cost of implementing food safety measures, frequently, does not increase the price received for product, which leads some to not adopt any new practices. The price does not increase because of imperfect information that is due to the buyers lack of ability to distinguish between a product that has third-party certifications and a product that does not. This does not mean there are not any benefits to certification. The benefits are reduced risk and the decreased probability of a catastrophe occurring. In the event of an outbreak there is the loss of sales, lawsuits, and damage to the reputation. There is also the benefit of opening up doors to new buyers because some retailers and foodservice buyers require third-party certifications (such as GAPs and GMPs) of their suppliers. Growers must consider all costs and benefits. They need to determine if the anticipated benefits outweigh the costs and that decision is different for multiple operations (USDA, 2004).

Another consideration to food safety legislation is the size of operation that will be required to comply. The costs that a large operation will face will not have the same impact as the costs faced by a small operation (Antle, 1999). The costs can be broken into direct and indirect. The direct costs include the fixed costs such as the necessary capital needed to purchase new equipment. The indirect costs include the variable costs “such as changes in production procedures and input quality” (Hoffman, 2010). Smaller operations will have a more difficult time having the money to implement any necessary changes in which to adhere to any new legislation as opposed to a larger operation. Compliance is likely to require upgrades made to the farm and possibly the hiring of new staff to keep up with additional record keeping requirements. Much of these upgrades will necessitate a direct cost that most SMEs do not have at their disposal. Giving smaller firms more time to become compliant with changed regulations or new standards can ease this financial burden (Antle, 1999).

Minimization of health risk, morbidity, and mortality are the major benefits to food safety legislation (Antle, 1999; Hoffmann, 2010). Cost of illness estimates can be considered a lower bound to the monetized benefit of improved food safety because these estimates frequently only include the cost of all treatments and the loss in productivity (income) that is occurred during the illness (Hoffmann, 2010). Crutchfield and Roberts (2000) estimated that foodborne illnesses cost \$6.9 billion annually.

Food system traceability has been mandatory in the European Union since January 1, 2005 under the European Union Traceability Regulation No.178/2002. The legislation defines traceability as “the ability to trace and follow a food, feed, food-

producing animal or substance intended to be, or expected to be incorporated into a food or feed, through all stages of production, processing and distribution” (EU, 2012). The regulation began for the purpose of restoring confidence back to the consumers of the safety of EU member state beef production after a BSE outbreak in 2001. Gracia and Zeballos (2005) performed a study to examine the impact on consumers and retailers. A survey was administered to 260 consumers in Spain during the spring and fall of 2002. The impact on the consumers was not entirely positive; consumers believed that the regulation increased the price of beef and was unnecessary. The consumers did acknowledge the benefits and their confidence in the safety of beef was increased. The study also found that retailers shared the consumers’ perception that the regulation increased the price of beef, increased confidence in safety, but overall it was unnecessary (Gracia and Zeballos, 2005).

In 2006, Stuller and Rickard (2008) used a survey to gain insight into the benefits of traceability from the perspective of growers, packers, and shippers. Surveys were mailed to 174 specialty crop growers, packers, and shippers in California and had a response rate of 29.3%. Based on those that responded, the benefits of a traceability system “pinpoint quality characteristics,” somewhat “improve efficiency,” “increase firm reputation,” somewhat “add value,” and “increases product differentiation” (Stuller and Rickard, 2008). However, the study respondents also reported that a traceability system did not lower the cost of distribution (Stuller and Rickard, 2008).

## **U.S. Foodsystem Legislation and Oversight**

The first major legislation regarding food and food safety in the United States was the 1906 Food and Drugs Act and the Meat Inspection Act. The 1906 Food and Drugs Act “prohibited the interstate transport of unlawful food and drugs under penalty of seizure of the questionable products and/or prosecution of the responsible parties” (FDA, 2009b). The 1906 Meat Inspection Act required mandatory livestock inspections and enabled the USDA to enforce food safety regulations and inspect and monitor operations in the meat packing industry (FSIS, 2006). The Bureau of Chemistry (BOC) was put in charge of regulating the 1906 legislation (Swann, 2005). Issues regarding food labeling were addressed with the Gould Amendment in 1913 that required food package contents to be “plainly and conspicuously marked on the outside of the package in terms of weight, measure, or numerical count” (FDA, 2010a).

Congress passed the Perishable Agriculture Commodities Act (PACA) in 1930. This legislation pursued by produce growers who pushed for the legislation due to the problems in assessing responsibility for produce problems. Specifically, growers, shippers, packers, transporters, and others in the produce supply chain were having problems with produce perishing and then being able to determine who was at fault for the spoiled goods. The PACA established record keeping requirements and required shippers to assign a lot number or some form of identification to their loads to establish a paper trail until the time of the sale (Golan et al., 2004).

The Agricultural Adjustment Act (AAA) passed in 1933 with the purpose of controlling the supply and price of corn, wheat, cotton, rice, peanuts, tobacco and milk.

These price and quantity controls were maintained through payments to producers in return for the producers setting aside (not planting) some of their land. The original version of this act was found to be unconstitutional; it was rewritten and passed into law in 1937 (Ganzel, 2012). Also, in 1933 the FDA recommended a revision of the 1906 Food and Drugs Act as it had become obsolete. More than 100 people were killed in 1937 due to Elixir Sulfanilamide, a medicine that contained the poisonous solvent diethylene glycol. After this dramatic event Congress passed the Federal Food, Drug, and Cosmetic (FDC) Act in 1938. Then in 1948, the Miller Amendment states that a good transported from one state to another to get to the consumer is to be regulated under the FDC Act (FDA, 2010a).

Even with the FDC Act there were still problems such as the problem of proving who was to blame in the event of a problem. A committee to investigate the use of chemicals in food was initiated in 1949, which subsequently lead to several amendments of the FDC Act. These amendments included the Miller Pesticide Amendment of 1954, the Food Additive Amendment of 1958, and the Color Additive Amendment of 1960. These amendments included testing for effectiveness, regulations on safety (pre-market), and set a level of tolerance for pesticide use on raw food. There was also a clause known as the Delaney Clause that prohibited the use in food or animal feed of any chemical that was a known carcinogen (FDA, 2010a). Cumulatively, the effect of these amendments was to pass the burden of proof for demonstrating food is safe onto the industry (Vogt, 1995).

The FDA was assigned responsibility for enforcing the honest and informative labeling of consumer products with the Fair Packaging and Labeling Act in 1966. After an outbreak of Botulism in canned foods low-acid food processing regulations were issued that required adequate heat treatment (FDA, 2010a). Due to problems with consumer misperceptions regarding food safety (particularly the presence of known toxins), the Delaney Clause was abolished in 1996 (Vogt, 1995). This was followed in 1996 with the Food Quality Protection Act that allowed for the minor risk of a presence of carcinogens (FDA, 2010a). In 1990 the Nutrition Labeling and Education Act was passed to regulate the nutrition and health claims on food packages, and provide consistency in use of terms defined by the Secretary of Health and Human Services. Then the labeling of foods containing protein derivatives that cause the majority of food allergies (found in peanuts, soybeans, cow's milk, eggs, fish, crustacean shellfish, tree nuts, and wheat) was addressed in the Food Allergy Labeling and Consumer Protection Act of 2004 (FDA, 2010a).

### **Motivation for New Legislation**

The ERS estimated in 2000 that the economic cost of a foodborne illness (caused by one of the top five pathogens) is \$6.9 billion annually (Crutchfield and Roberts, 2000). In 2010, foodborne diseases tracked by the CDC were found to be the cause of 1 in 6 Americans (about 48 million individuals) getting sick, 128,000 hospitalizations, and 3,000 deaths (CDC, 2012).

The consequences of foodborne illness are also significant from the perspective of producers. By way of example, a *Salmonella* contamination event in 2008 was originally

attributed to raw tomatoes but later linked to jalapeño and Serrano peppers. In the end, 252 people were hospitalized and there were two deaths possibly linked to the outbreak (Paggi et al., 2008). According to the United Fresh Produce Association, the outbreak led to an estimated \$100 million loss to the producers and distributors of the jalapeño pepper and tomato industries (NCSL, 2011). Also in 2008, *Salmonella* illness attributed to peanuts forced the Peanut Corporation of America was forced to file for bankruptcy (NCSL, 2011), and led to 3,900 product recalls for over 200 companies. The *Salmonella* outbreak in peanuts and the media coverage surrounding the outbreak led to new food safety legislation in Georgia to establish guidelines for safety. These incidences highlighted the need for increased food safety measures in the U.S. ranging from increased frequency of inspection to recall authority (Wittenberger and Dohlman, 2010).

### **Food Safety Modernization Act**

The Food Safety Modernization Act (FSMA) was signed into law on January 4, 2011 (FDA, 2011a). The aim of the law is prevention, rather than a reaction to a problem, and the goal is to increase compliance by giving the FDA the responsibility to monitor and enforce food safety. Congress has established an implementation timeline with deadlines ranging from six months to two years. Within six months of the laws' implementation, the FDA was required to establish a system to enable them to trace both imported and domestic food. A two year implementation period was permitted for implementing requirements such as food testing by accredited laboratories to ensure time for the U.S. food testing laboratories to meet standards and establish recordkeeping

requirements for high-risk food manufacturers, processors, packers, or any facility that holds high-risk foods (FDA, 2011a).

*Final Contents of Food Safety Modernization Act*

The Food Safety Modernization Act (FSMA) addresses five areas: preventative controls, inspection and compliance, imported food safety, response, and enhanced partnerships. Preventative control requirements assigned the FDA responsibility to monitor food safety and to implement measures to prevent outbreaks instead of reacting to outbreaks. For fruit and vegetable production and harvesting, the FDA will be required to establish science-based, risk minimizing standards. The inspection and compliance provisions require the FDA to monitor and inspect imported food facilities, to mandate food recalls, and the authority to refuse imports. This is a significant extension of authority as previously the FDA could only request voluntary food recalls. The FSMA also encourages the strengthening of collaboration between all agencies engaged in overseeing the U.S. food supply (FDA, 2011b).

According to the Act, a science-based plan that will have to be designed and implemented by the FDA to aid in the prevention of foodborne outbreaks. This will include a set of rules for a food facility (e.g., manufacturer, processor) and the requirement of a facility to write up every three years an analysis of any potential food safety hazards (i.e., chemicals, pesticides, allergens). The process does not end there; after the analysis is written a facility will then work through any identified potential hazards and eliminate or minimize the threats and continue monitoring the potential hazards (NCSL, 2011). The law also lists produce safety standards that will be mandatory

and will entail a science-based, minimum standard that will be established by the FDA. The FDA will have to consider all natural, potentially intentional and unintentional hazards that could occur. In regard to intentional hazards, the FDA must come up with a strategy to protect the vulnerable points in the food supply. Other potential hazards such as temperature, hygiene and soil amendments must also be considered in the establishment of the standards (FDA, 2011a).

FSMA is going to have some new requirements for importers into the U.S. and give the FDA new responsibilities over monitoring imports. Importers now have the responsibility to verify the safety of the inputs for their products and verify that there are preventative measures in place. A third party certification program is also put in place that is used to aid in the entry of imports and high risk foods can be required to have a third party certification as a condition of entry. In the event of a country or facility denying access to the FDA then the FDA has the authority to deny entry of that country or facilities' products (FDA, 2011b).

The law will not replace local and state regulations, but will be required in addition to those regulations that were previously set in place. In addition there is a section in the law that will require the FDA to work with the local and state programs to build a food defense system and provide the additional resources that will be necessary. Encouragement is also given to the FDA to rely on the state food safety programs that are already in place and to provide additional training to the state, local and tribal food safety officials (NCSL, 2011).

The law also will not change the definitions as established under the Bioterrorism Act of 2002. Under the 2002 Bioterrorism Act, processing is defined as “cutting, peeling, trimming, washing, waxing, eviscerating, rendering, cooking, baking, freezing, cooling, pasturing, homogenizing, mixing, formulating, bottling, milling, grinding, extracting juice, distilling, labeling, or packaging.” Farm is defined as (FDA, 2009a):

a facility in one general physical location devoted to the growing and harvesting of crops, the raising of animals, or both. Includes: (i) Facilities that pack or hold food that is grown, raised, or consumed on that farm or another farm under the same ownership; and (ii) Facilities that manufacture/process food that is consumed on that farm or another farm under the same ownership.

The FDA has begun the FSMA implementation process with the first new regulations being aimed at preventing the entry of unsafe food into the market place. The first regulation is giving the FDA the ability to keep any products that are possibly contaminated or misbranded off the shelves for up to 30 days until they can determine what action should be taken. The second regulation involves the importation of food and the requirement that the FDA must be notified if any import has been denied entry to another country. This will be accomplished under the notice system that was established under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (FDA, 2011b). On April 4, 2011, a few months after the passage of FSMA, the FDA launched a web page and search engine to allow consumers to quickly and easily

learn of new recalls. The web page also includes a “frequently asked questions” page and videos by food safety experts (FDA, 2011b).

In time for the six-month deadline, July 3, to meet their goals the FDA implemented an anti-smuggling strategy to prevent the smuggling of food that could be dangerous to humans and animals. They also took action against dietary supplements by introducing a document that will require the industry to notify the FDA before adding any new ingredients that have an unknown safety profile and provide evidence to the FDA of the safety of the potential additive (FDA, 2011b).

#### *The Tester-Hagan Amendment*

The Tester-Hagan Amendment to the Food Safety Modernization Act (FSMA) is intended to protect small food producers and processors by exempting them from many of the requirements of the Act. To be eligible for exemption a businesses total value of products sold must be less than \$500,000 (adjusted for inflation and calculated using a three-year average) and sell more than half of their products to ‘Qualified End Users’ in the same state or within 275 miles of the businesses’ location. ‘Qualified End Users’ are defined as direct to consumers, through the Internet, direct to restaurants, or direct to retail food establishments (i.e., groceries and institutional kitchens). Small farms will not be required to have a preventative plan in place, but will still be responsible for proving to the FDA that there is a food safety plan in place or that they are in compliance with any state and local food safety laws that are already in place (McGeary, 2010). For those that opt to follow state and local regulations, they will be required under the Amendment

to provide on the food-packaging label (or at time of purchase) the name and address where the food was purchased (Tester, 2011).

The Tester-Hagan Amendment will allow farmers meeting the eligibility requirements to receive an exemption from the new produce safety standards put out by the FDA, they will not have to register with the FDA, and they will not have to have a sign or label on their product with the farm name and address (McGeary, 2010). If a farm is linked to an outbreak or the Secretary finds it necessary to protect the public then the Secretary has the authority to take away the exemption (Tester, 2011).

For those businesses that process and sell less than half of their products directly to consumers there is still an option to apply for an exemption. The business must prove compliance with state and local laws and register under the requirements of the Bioterrorism Act. If an exemption is granted then the business will not have to follow the new produce safety standards, but the exemption can be lifted at anytime if the business is linked to an outbreak (McGeary, 2010).

Opposition to this amendment arose over concerns of an exemption defeating the purpose of the Act. Food will still be entering the market that was produced without measures in place to reduce the risk of foodborne diseases. Concern was also raised over the producers and processors that will be excluded from being able to sell to numerous markets (Bottemiller, 2010).

### **Healthy, Hungry-Free Kids Act of 2010**

Former U.S. Senator, Blanche Lincoln, an Arkansas democrat, sponsored the Healthy, Hungry-Free Kids Act of 2010. The Act was signed into law on December 13,

2010 by President Barack Obama to become public law number 111-296. It passed in the Senate by a unanimous consent on August 5, 2010. December 2, 2010, the bill passed in the House with a roll call vote (Govtrack, 2011). The Child and Adult Care Food Program (CACFP) is recognized under the bill as a nutrition program that promotes the health and development of children with the purpose being to reduce the amount of paperwork and to increase afterschool meal availability (FNS, 2012a).

Through the Act the reimbursement rate for school lunches increases by six cents per meal, which will aid schools in their ability to provide healthier meals (FNS, 2011c). For the 2010-2011 school year reimbursements rates for the National School Lunch Program in the contiguous states, for those schools with more than 60 percent qualifying for free lunch the school receives \$2.74 and those with less than 60 percent receiving \$2.72. The rate is more than one and a half times that for Alaska with \$4.43 reimbursement rate when more than 60 percent qualifying for free lunch (FNS, 2011c).

As a summary put together by the Food Research and Action Center points out some of the highlights of the Act are that only lower-fat milk will be available to children over two years of age and throughout the day water will be required to be available for children. The USDA is also given some new responsibilities such as developing new nutrition standards and a meal plan for meals and snacks and a requirement for the USDA to make period reassessments and updates of the newly developed standards and meal plans no less than every 10 years. There is also a portion of the bill that will make the USDA encourage the consumption of whole grains, fruits and vegetables, and low-fat and non-fat dairy and lean protein options, and physical activity for all participating childcare

centers and family childcare homes. The USDA will be required to provide training and assistance to those participating in the CACFP. The bill will start a study with the USDA and the U.S. Department of Health and Human Services looking at childcare facilities' nutrition and wellness practices. The Secretary of Agriculture and the Secretary of Health and Human Services will work together to encourage the state licensing agencies for childcare centers and homes to include standards to regulate nutrition, provide physical activity and limit the amount of time in front of a screen (FRAC, 2012). Specialty crop consumption was encouraged in the 2002 farm bill which included the authorization of a Fruit and Vegetable Snack Program that aimed at providing free fresh produce to school children (AMS, 2012a).

### **Traceability Requirements and Best Practices**

Traceability is the “ability to trace the history of a product’s origin including the identity of the farms and the marketing firms along a supply chain” (Pouliot and Sumner, 2008). A traceability system can allow for an efficient recall in the event of a foodborne illness outbreak. An effective traceability system requires the identification of the product, traceable product information, tracking the movement of information through the supply chain, and the tools for tracking (Regattieri, Gamberi, and Manzini, 2007).

Traceability has become more important today due to the increased awareness of the need for food safety (Sarig, 2003), and the increased integration of the food system. Improvements in transportation system infrastructure has allowed food to be transported much further and this combined with more products traveling longer distances increases the potential for an outbreak. The more that food products are handled and mixed

together, the higher the chance of contamination. The FDA recommends “that raw whole produce not be stored with finished product and finished product be transported in clean, sanitary vehicles” (FDA, 2008).

Identification of the product is critical and includes the documentation of such items as type, size, grade, perishability, and life span. This information is necessary to pass onto the next step in the production process and critical to the one step forward and one step backward approach to product traceability (GS1, 2009; Regattieri, Gamberi, and Manzini, 2007). This upstream and downstream approach of tracing allows for the ease in the tracing of information in the event that it is necessary to trace back and identify at all steps where a problem might have occurred and forward to where the food product has moved (Regattieri, Gamberi, and Manzini, 2007). This need for pertinent information as a first step to implementing a product traceability system is also identified in the *Global Fruit and Vegetable Traceability Implementation Guide* (GS1, 2009).

The first piece in the process of a traceability system is the identification of characteristics and keeping track of the traceable information (Regattieri, Gamberi, and Manzini, 2007). All units (bins, totes, containers, trailers) must be identified and assigned an identification number. Each unit should contain a label with the important information including a unit identification number, commodity and variety names, company identification number, and any harvest/grower information. Although not usually required, it is also recommended that production systems with traceability in place keep records of all of their production inputs (i.e. fertilizers or pesticides), the dates of their use or application, harvesting dates, and the names of employees or the employee team

involved at each step. As a third step, the collected traceable information needs to be easily transferred and shared through the supply chain. To facilitate this, the use of appropriate technologies or tools is required. Currently radio frequency identification (RFID) or barcoding systems are most commonly used to implement effective traceability systems (GS1, 2009; Regattieri, Gamberi, and Manzini, 2007).

For some types of produce, traceability is less costly and easier, than for other types of foods. This is due to the inability of many types of produce to be stored for long periods due to their relative perishability. However, this is not true for all types of produce as some types such as tubers and some root vegetables that can be stored for long periods of time. Also, produce is usually packed in smaller quantities, and in the case of fresh produce, as individual units so it is more easily segregated in the event of a problem. Between fresh and processed produce, fresh produce is the more difficult type to trace due the inability to keep track of the important information in the same way as processed fruit. For example, a canned product contains all the tracking information that is necessary in the event the produce needs to be tracked (Golan et al, 2004).

Traceability is now a requirement under FSMA except for the exemptions as laid out in the Tester-Hagan Amendment. However, due to food safety concerns, it is believed that some buyers will begin to require their producers to have a traceability system. The requirement for some producers to become Good Agricultural Practices (GAPs) certified by their buyers is also increasing the adoption of traceability practices due to the traceability portion of the certification process. GAPs is a voluntary certification but

many food buyers require their producers to be certified with the goal of reducing the information asymmetry between themselves and producers (Golan et al, 2004).

## CHAPTER FOUR

### RESEARCH METHODOLOGY

This chapter begins with a look at the approaches used to examine food system studies and issues of traceability. The chapter will then present the methodology employed during Phases I and II of this study.

#### **Approaches to Study Food Systems**

Food system studies vary considerably both in the aspect of the food system that they examine, and the analytical methods used in their analysis. Some studies use quantitative research methods while others use qualitative. Quantitative research is “the kind of research that involves the tallying, manipulation, or systematic aggregation of quantities of data” (Henning, 1986). Surveys and experiments are a couple of ways in which quantitative data can be collected (Creswell, 2009). Surveys provide a numeric description of the participant’s responses (Babbie, 1990). Experiments explore the influence of a treatment on an outcome (Keppel, 1991). The intent of quantitative research is to obtain generalizable results (Babbie, 1990).

Qualitative research “is defined as a naturalistic approach that seeks to understand phenomena in uncontrolled, context-specific settings” (Hoepfl, 1997; Neutens & Rubinson, 2002). It allows for the collection and analysis of data that are not numbers, but rather data that takes the form of text, audio, or visual records. Qualitative research allows the researcher to understand the perception or meaning behind all participants’

feelings and experiences (Harris et al, 2009). Qualitative data can be collected in various ways such as through recordings or transcripts of focus groups, interviews, observations, internal and external documents, photograph inspection, Delphi Technique, and various Internet methods. Interviews are done on an individual basis and vary in the methods of structure. Observational data collection involves the researcher in a natural setting to get a greater understanding of reality in some situations. Internal and external documents use such things as manuals, memos, and personnel files. The Internet method uses blogs, emails, and websites to collect data (Harris et al, 2009).

The following discussion provides a brief overview of some of the more well-known studies and commonly used approaches used to examine issues related to food systems. Hardesty (2008) studied local food's role in institutional markets by looking at transaction costs through the analysis of information, negotiation, and monitoring costs. Data was collected in 2007 through a series of interviews with 99 foodservice managers at colleges, universities, and teaching hospitals in California. The focus of the study was from the institutional buyer side and used an ordered logit analysis. Colleges and teaching hospitals were found to have procured locally grown produce with high transaction costs and at a price premium; they were also not likely to take seasonality of key items into consideration and less likely to care about stable pricing of products. It was also found that foodservice directors with a locally grown buying program already in place valued the importance of procuring products "grown by small-or mid-size producers" more highly (Hardesty, 2008). Darby et al. (2008) examined the geographical range and value of "local" food by consumers through the use of a choice-based conjoint analysis.

Conjoint analysis is an empirical approach “used to measure and model consumer tradeoffs, preferences, and choices” (Hensher, Louviere, and Swait, 1999). The data was collected through a survey administered through interviews with 530 shoppers in 17 Midwestern locations between August 2005 and January 2006. Locations included urban, suburban, and rural farmers markets, retail grocery stores, and roadside stands. This study found that there is a demand for “local”, but consumers do not distinguish between a product grown “nearby” and products grown in state (Darby et al, 2008).

Mailed surveys are a common method for data collection due to the ability to reach a broad cross-section of respondents and it’s relative cost effectiveness. A mailed survey was used to study consumer preference for locally grown food in Missouri. During November of 2000, approximately 1,600 surveys were mailed to a random sample of households in a five-county, rural area of Missouri. The study found that households with a member that was from a farm background and/or were part of an environmental group were willing to pay a premium for locally grown food. Households with higher income and more education (as compared to the area’s average) were also more willing to pay a premium. However, 58% of those surveyed indicated an unwillingness to pay for locally products that were believed to be of the same quality as other products (Brown, 2003). Gregoire, Arendt and Strohbahn (2005) also used a mailed survey, in this case to explore the benefits and challenges of marketing locally to foodservice operations, including restaurants and institutions. A questionnaire was mailed to 560 Iowa farmers whose production ranged from fruit and vegetable farmers to meats. Thirty-five percent (195) of producers responded. Standard descriptive statistics were calculated and

analysis of variance was used to compare the benefits and challenges of marketing to these customers. These authors found that the majority of producers sold direct to the consumer (82%). Only 30 percent of those surveyed made use of a restaurant/institutional marketing channel. The top two reasons for not selling to local foodservice operations were noted to be that “I don’t produce enough quantity”, and “the buyers are not receptive” (Strohbehn, Gregoire, and Arendt, 2005)

Consumer willingness-to-pay (WTP) for local food is another frequently examined topic. Survey methods, using various approaches to survey administration, are the most commonly used approaches to assessing WTP. One large, recent study administered an online survey to grocery shoppers around the country. Knowledge Networks, Inc., a private research firm based in California was contracted to identify participants and administer the survey. Of the 1,829 grocery store customers surveyed, 69% responded. It was found that WTP with apples and tomatoes for organic and fair trade was significantly correlated with “perceived consumer effectiveness” (PCE). PCE is a measure “to aid in understanding an individual’s perceived belief in that her/his purchase will prove to achieve the envisioned end goal” (Nurse, Onozaka, and McFadden, 2010) WTP for locally grown apples was significantly related to PCE, but PCE was not significantly related to locally grown tomatoes. It was also found that PCE was the best indicator of WTP (Nurse, Onozaka, and McFadden, 2010). Another WTP study collected responses through a telephone survey of 500 South Carolina consumers in March 2007. This study used a contingent valuation framework in which hypothetical questions were asked to ascertain the consumers’ willingness to pay for specific product

attributes. It was found that South Carolina consumers had a strong preference for locally grown products (products grown within the state of South Carolina), and they were willing to pay a premium of 27 percent for produce and 23 percent for animal products. Not surprisingly, the amount of this price premium was found to be dependent upon the product quality perceived by the consumer. Interestingly, however, only 32 percent of consumers were able to identify South Carolina grown products (Carpio and Isengildina-Massa, 2009).

Onyango, Hallman, and Bellows (2007) conducted a survey to identify Americans' willingness to purchase foods labeled as organic or genetically modified (GM) and their views on consumption decisions. Telephone interviews were conducted between February and April 2003. Participants were chosen at random from around the nation and were over the age of 18; in total, 1,201 interviews were completed (38% completion rate). Results of this study suggest that organic purchasing and labeling was important to vegetarian-vegan and naturalness (no artificial flavors or colorings) buyers, as well as more liberal, moderately religious, young people and/or females.

Quantitative research methods are not the only approaches to study food systems. A qualitative study in upstate New York was conducted to examine "current and past food and nutrition roles, food choices, changes in dietary behaviors, access to fruits and vegetables, and ethnic identity" (Devine et al., 1998). Eighty-six (86) participants, representing Latino, black and white populations and a variety of household incomes, were interviewed for 30 to 60 minutes using a semi-structured interview, which was conducted in either English or Spanish. All interviews were recorded and transcribed

into English. This study found that past experiences strongly influenced each participant's fruit and vegetable choices, but choices could also change over time with new environmental influences. In particular, early experiences with fruit and vegetable consumption and production (i.e. family gardens) had a positive impact on long-term produce choices (Devine et al., 1998).

### *Traceability*

Increased awareness of food safety concerns, increased integration of our food supply channels, and advances in technology that have allowed for tracking the movement of food through our food system, have enabled and required traceability within the food system. While the literature examining this issue is relatively small, a few recent studies have examined this issue. A 2006 California study surveyed specialty crop producers regarding the extent of their traceability implementation. A sample of 174 producers was randomly selected from a list of specialty crop producers that was compiled using marketing associations' member lists that were available online. A total of 47 responses were obtained (29.3% response rate). The results showed that, according to most producers, the marginal benefits of traceability exceed the marginal costs of these programs. The main factors motivating implementing and maintaining a traceability system were litigation concerns and a firm's reputation (Stuller and Rickard, 2008).

Another California study looked at the costs and benefits associated with the implementation of the proposed 24-hour traceability rule. The 24-hour traceability rule would allow for a request by the FDA to electronically trace a product at each stage of the supply chain within 24 hours of the request. This was accomplished through

examining the California Leafy Green Marketing Agreement (LGMA) that was formed in September 2007 after a 2006 *E. coli* outbreak with bagged baby spinach. At the time, 99% of the leafy green production in California was a part of LGMA, which included 120 growers, distributors and processors. A profit model developed by Pouliot and Sumner (2008) was used along with data from the 2006 outbreak. This study found that without a 24-hour traceability system that will allow for a rapid recall, even participants with uncontaminated product will still face economic losses. It was also found that the traceability system must be adjusted to the industry of implementation due to differences in product handling. For products with few steps between the farm gate and consumer traceability programs can be costly, relative to the benefits, for small producers to implement (Nganje et al, 2011).

A longitudinal case study approach has also been used to examine the use of traceability. In a case study by Alfaro and Rábade (2008), a Spanish firm involved in vegetable production was used for analysis. The traceability system was implemented in January 2002. Between October 2003 and September 2006 interviews with numerous employees were conducted and recorded. The interviews lasted about two hours and used a semi-structured interview format. In the case of this firm, the investment in the traceability system was recovered in less than two (2) years and it was believed to be a success. As of 2008, the system was still in operation and running smoothly. There was also consumer satisfaction with the amount of information that was quickly accessible (Alfaro and Rábade, 2008).

The supply chains for meat, dairy, fruit and vegetables, and grain/bread products were examined as part of a multi-national traceability systems study across seven countries. In 2002, 49 (out of 92) firms in Australia, Germany, Netherlands, Spain, Sweden, UK, and USA responded to an electronic questionnaire that examined the current, food supply chain practices to facilitate traceability of food products as a source of food safety. To further support these findings, interviews were also performed. In some cases one company handled multiple links in the supply chain. It was found that firms care more about their own company, instead of the entire supply chain and that legislation is the important motivator to get firms to meet traceability demands (Van der Vorst, 2004).

Food system traceability has been mandatory in the European Union since January 1, 2005. In 2005 focus groups were conducted in 12 European countries to determine consumers' perception of traceability. Telephone calls were used to recruit consumers. Each focus group focused on one of three topics: food labeling and purchasing, food traceability in regards to honey and beef meat, and current and future traceability systems. Each focus group meeting consisted of 8 to 11 participants; in total 210 individuals participated. This study found that the country in which participants were located made a difference in their understanding of traceability. France, Germany, Hungary, Italy, Malta, Slovenia and Spain were found to be knowledgeable of traceability; however, Greece, Lithuania, Norway, Poland and the Netherlands only had a limited understanding of traceability. It was also found that in all examined countries,

consumers preferred products that were sourced from their own region (Giraud and Halawany, 2006).

### **Study Methodology**

This study seeks to identify and examine the barriers in the direct farm-to-institutional foodservices marketing channel, and the impact on small- and medium-scale specialty crop producers of traceability programs. As these issues are not well examined, particularly in the U.S. Southeast region, it was decided that a qualitative research approach would be the most appropriate for this initial study.

Focus groups were convened to collect data. Focus groups are “7 to 12 individuals assembled by purposive sampling who are asked questions associated with the research questions and prompted to respond freely” (Kitzinger, 1995). Instead of asking questions to individuals directly, focus groups encourage dialogue among participants about their experiences and knowledge. Focus groups also help participants to “explore and clarify their views in ways that would be less easily accessible in a one-on-one interview” (Kitzinger, 1995)

Data was collected in two phases between 2009 and 2011. In Phase I (November, 2009 to December, 2009), focus group meetings were held with small- and medium-scale specialty crop producers. Discussions in these meeting identified and explored the barriers in direct farm to institutional foodservice marketing, and potential solutions to those barriers. Phase II (March, 2011 to April, 2011) consisted of another series of focus group meetings with small- and medium-scale specialty crop producers and other stakeholders. In this research phase, meeting discussions were focused on examining the

impact of a hypothetical requirement for traceability for all specialty crops producers. Meetings for Phases I and II were conducted in Georgia, North Carolina, and South Carolina. This region was chosen due to the similarities in specialty crop production, and the access to similar marketing channels, as well as the similarities in barriers and opportunities with respect to the marketing channels.

Results from these qualitative research phases guided the development of a subsequent survey for specialty crops producers, which is designed to quantitatively assess these issues. This survey is considered beyond the scope of this study and will not be further described herein.

### *Focus Group Research Methodology*

Focus group research is an involved research approach, which requires several stages. The following discussion introduces these steps and how they were implemented for this study.

#### Planning

Planning activities involve determining the objectives of the study, and determining how and where the data will be obtained. Research began with the planning step to determine the logistics of the study, such as what was to be gained from the study, how the research was to be conducted, and other such activities. In this study, the planning phase also included the development of a recruitment script, a short participant questionnaire, and a moderator's discussion guide. A recruitment script was developed to assist in the recruitment of focus group participants through email and telephone calls. A

participant questionnaire was developed that would capture the demographic information of focus group meeting participants.

A moderator's discussion guide was also developed. In developing this guide, a review of the literature was conducted to understand the current state of research and Cooperative Extension activities related to the SME-institutional foodservice marketing channel. On the basis of this review, and through discussions with key project collaborators, a moderator's discussion guide was developed. As is standard with such instruments (Krueger, 1998b), the discussion guide began with a welcome to the participants and outlined the meeting process and the participant's rights. The participants were then asked a couple of preliminary, introductory questions to initiate a dialogue among participants before beginning research-focused conversation. This was followed by some transition questions to get the participants more comfortable with the topic of interest. The transition questions led into the key questions based on the main objectives of the study. Following the key questions, the ending questions wrapped up the discussion and concluded with a final, open-ended question to the participants (Krueger, 1998b). Separate Discussion Guides were prepared for meetings conducted within Phase I and Phase II of this project. Copies of these guides are included in Appendices C and D respectively.

Identifying and scheduling locations for each focus group meeting are also considered part of the planning process. Table 4.1 shows each of the focus group locations. The locations were chosen so as to reflect areas, which produce different types of agricultural products, such as the differences between coastal and inland production. It

was also important to find locations that were centrally located, and near enough to a sufficient number of producers that participants would not require too much travel. Once the geographic locations were decided upon, meeting venues were selected that would be easily accessible to the group. It was necessary to find locations with a space that had adequate seating that could be rearranged to have participants facing one another in a way that would encourage dialogue, but still provide a place for the note takers and refreshments separate from the group. Parking availability and ease of finding the locations were other considered location criteria.

Table 4.1 Focus group meetings: Type and location

<b>Focus Group #</b>	<b>Phase</b>	<b>Date</b>	<b>Type of Group</b>	<b>Location</b>
FG1	I	11/13/09	Producers	SC –Charleston (Low Country)
FG2	I	12/5/09	Producers	SC – Columbia (Midlands)
FG3	I	11/6/09	Producers	SC – Clemson (Upstate)
FG4	I	12/5/09	Producers	NC – Hendersonville
FG5	I	11/16/09	Producers	GA – Athens
FG6	I	2/26-27/10	Producers	SCRI Conference – Clemson, SC
FG6	I	2/26-27/10	Producers	SCRI Conference – Clemson, SC
FG7	I	2/26-27/10	Producers	SCRI Conference – Clemson, SC
FG8	I	2/26-27/10	Producers	SCRI Conference – Clemson, SC
FG9	I	2/26-27/10	Producers	SCRI Conference – Clemson, SC
FG10	I	2/26-27/10	Producers - Berry/Fruit Producers	SCRI Conference – Clemson, SC
FG11	I	2/26-27/10	Producers - Leafy Greens Producers	SCRI Conference – Clemson, SC
FG12	I	2/26-27/10	Producers - Herbs and Bulbs; Tubers and Root Veg., Legume Producers	SCRI Conference – Clemson, SC
FG13	I	2/26-27/10	Producers - Tomato and Pepper Producers	SCRI Conference – Clemson, SC
FG14	II	3/11/11	Producers	SC – Aiken (Midlands)
FG15	II	3/18/11	Producers	GA – Athens
FG16	II	4/1/11	Producers	SC – Anderson (Upstate)
FG17	II	4/16/11	Producers	S-SARE – Florence, SC
FG18	II	4/16/11	Producers	S-SARE – Florence, SC
FG19	II	4/16/11	Mixed Stakeholders Group	S-SARE – Florence, SC
FG20	II	4/16/11	Mixed Stakeholders Group	S-SARE – Florence, SC
FG21	II	4/16/11	Mixed Stakeholders Group	S-SARE – Florence, SC

The conferences were aimed at bringing all participants in the supply chain together in a dialogue. During Phases I and II all types of specialty crop (berry, fruit, leafy greens, herbs and bulbs, tubers and root vegetables, legumes, tomatoes and peppers) producers were brought together in a discussion. During Phase I producers also had a chance to break into groups with participants with similar production operations. During Phase II, producers were brought together with participants from all facets of the supply chain after a round of discussions with fellow specialty crop producers. The Phase II conference was held the day after the Carolina Agri-Solutions Growers Association's (CASGA) annual RAIN (Research, Agriculture, Industry and Nature) Conference. CASGA allowed for a research team representative to be present at their meeting to promote and recruit participants for the conference.

### Recruitment

Phases I and II producer focus group participants were identified using local NGO and university extension partners. Assistance was provided in the form of specialty crop producer contact information and access to listservs to extend the invitation to focus groups and conferences. Some producer participants were identified using the MarketMaker™ (GA MarketMaker™, 2012; SC MarketMaker™, 2012) sites for Georgia and South Carolina to obtain business contact information. A similar site for North Carolina was also used, which is supported by North Carolina's Department of Agriculture and Consumer Services (NC Farm Fresh, 2012). Each of the sites provides a list of producers, products grown, and contact information. Participant lists from Good

Agricultural Practices (GAPs) training sessions hosted by Clemson University's Extension were also used to identify producers and obtain contact information.

Using the recruitment script, emails were sent to potential participants inviting them to join in the discussion. Lack of email addresses or a lack of response to emails was a difficulty in the recruitment process. In cases where there was not sufficient response to populate a given meeting, potential participants were called using the recruitment script. Reminder emails or calls were made to confirm participants' attendance during the week prior to each meeting that provided directions and other necessary logistic information. For each of the two conferences, email was once again used along with a webpage developed to help recruit and register participants.

All producer participants were informed during the recruitment process about the incentives for them to participate. Producer participants were offered a \$50 stipend to help offset the cost of their travel, were served snacks and lunch, and were offered a copy of the project's final report when completed.

### Consent

Clemson University's Institutional Review Board (IRB) reviewed the research protocol and granted permission for this study to proceed in October 2009 for Phase I of the study and November 2010 for Phase II. For all participants, their rights and responsibilities as a research participant were reviewed before the focus group discussion began. For participants of focus group meetings that were held independently (FG1 – FG9 and FG14-16) participants were provided an individual consent form. For focus group meetings held at conferences (FG10 – FG13 and FG17 – 21) this information was

read to participants and hard copies made available. In this case, participants provided verbal consent of their willingness to participate in this study.

### Focus Group Moderation

At each focus group location, the room was set up to encourage dialogue between participants by using tables in which participants were facing one another. At each focus group a Moderator, Assistant Moderator, and note taker(s) were present. The Moderator led the discussion with help from an Assistant Moderator. The Assistant Moderator was responsible for making notes on a large pad of paper located at the front of the room. Highlights of what was discussed were written down and then placed on the walls for the participants to reference during discussion. The note takers were present to provide a written backup of dialogue in case the audio recording failed. Name cards were placed in front of each participant along with a notepad and pen to allow for participants to note their thoughts. The moderator and assistant moderator were located at the end of the table and note takers were positioned off to the side and/or back of the room, so as not to be a distraction.

The moderator began by welcoming all participants as they arrived and informed participants about restroom locations and refreshments. During focus group meetings held outside of the conferences, the moderator also distributed the participant questionnaire and IRB consent form, and offered participants refreshments before the meeting was formally started.

The Moderator started the discussion with an official welcome, introductions, and an explanation of how the day would progress. As per the Internal Review Board

approved protocol, the participant consent form was then reviewed. Through this process, participants were informed of their rights and asked to sign a document stating that they understood that audio was being recorded and that they did not have to answer any questions if they did not feel comfortable. All participants consented to audio recording of the session. After answering any questions, the meeting was formally started and the Moderator led the discussion using the Discussion Guide. Lunch was served either during a break in discussion or upon the conclusion depending upon the length of each meeting.

#### Transcription and Cleaning

Transcription of audio recordings was done upon the completion of the focus groups. Each room was contained two audio recorders to capture discussion; however, due to audio recorder failure, FG4, as identified in Table 4.1, did not have an audio file due to both audio recorders in the room failing to work properly. FG14, FG17, and FG19 had partial audio recorder failure, due to only one of the two recorders in the room capturing audio. Express Scribe 5.01 was used for the transcription process along with the aid of pedal and the audio files were transcribed into Microsoft® Word 2010. After the initial transcription the audio files were listened to again to ensure accuracy. Cleaning was also done to ensure the anonymity of all participants. This entailed going through the transcription files to remove any identifying information (e.g., participant and business names).

## Analysis and Reporting

A list of potential themes of what was to be gained from the research was constructed based on the aim and objectives of the study. These themes were used to provide an initial basis for data coding and analysis. A read-through was conducted of all transcription files and notes were taken to determine if any other important themes emerged from the discussions that were not part of the study objectives. Topics that were discussed more than once were noted in the potential themes list as seen in Table 4.2. This list was then narrowed down into the list of final themes that best encompassed all of the potential themes (Attride-Stirling, 2001). This method for establishing themes was chosen because relying solely on the aim and objectives to establish themes can result in some important discussion being ignored. However, relying only on the emergent themes has the potential to lose sight of the original objectives of the study (Attride-Stirling, 2001; Krueger, 1998a).

Table 4.2 Potential and final themes used for NVivo 9 coding

<b>Potential Themes</b>	<b>Final Themes</b>
Effect on production of traceability requirements	Barriers in farm to institution marketing [Phase I]
Needs identified by small-medium scale specialty crop producers	Solutions to barriers in farm to institution marketing [Phase I]
Barriers in farm to institution marketing	Needs Identified by Small-medium scale specialty crop producers [Phase I]
Solutions to barriers in farm to institution marketing	Motivation to implement traceability [Phase II]
Challenges to implementing and maintaining traceability	Challenges to implementing and maintaining traceability [Phase II]
Costs to implementing and maintaining traceability	Costs to implementing and maintaining traceability [Phase II]
Remedies to challenges of traceability requirements	
Record keeping	
Motivation to implement traceability	
Producer experiences (success, barriers) of producers servicing institutional buyers	
Willingness to supply (price expectations) of producers servicing institutional buyers	
Willingness and capacity of producers to meet the likely quality and (minor) processing requirements of institutional food buyers	

Transcriptions were organized and coded using the data management tool, NVivo, version 9. NVivo 9 is a software package that allows the user to organize and view the relationships between all of the documents. To ensure consistency one individual on the research team, completed all coding. The process required reading through all transcription files and identifying/coding sections of text with the relevant theme(s). After this step, NVivo 9 displays all mentions of a topic in one area so as to more accurately see the material related to a specific theme of interest. Using the features of NVivo 9 to

look at each theme individually, a second round of coding was conducted to get a more specific coding (Morgan, 1998).

Upon the completion of coding, analysis was conducted. Through the use of NVivo 9, each theme was individually analyzed. This was accomplished with a careful read-through of each theme and then the results for each theme were written up using direct quotes and summaries of discussions. The results as found from the focus groups were then compared to the literature to identify the similarities and differences from other studies.

## CHAPTER FIVE

### RESULTS AND DISCUSSION

This Chapter begins with an overview of characteristics of the focus group participants and their businesses, and then provides an overview of the results from the focus groups that were conducted in support of the objectives of this study. In Phase I of this study, the barriers and potential solutions to the barriers of the small-and-medium sized farm to institution marketing channel were studied. In Phase II of the study, the team reviewed the impact of hypothetical institutional foodservice traceability requirements on small- and medium-scale producers by examining the motivation, challenges, and costs of implementing and maintaining such a traceability system. Results of focus group meetings conducted during each of these two research phases are examined through each of the previously identified themes. Further, the implications of these findings for the Farm-to-School and Farm-to-Healthcare marketing channels are explicitly examined. This Chapter concludes by discussing the limitations of this study.

#### **Characteristics of Respondents**

During Phase I there were 57 specialty crop producer focus group participants and 36-specialty crop producer focus group participants in Phase II. Demographic information and characteristics of the participants' businesses were collected from those who participated in the independently held focus group meetings (those held during one of the conferences).

All participants were the owner, co-owner, or manager of their farm. The majority of participants were male (73% in Phase I and 71% in Phase II). Table 5.1 shows the breakdown of where the participant's farms are located and Table 5.2 shows the breakdown of participant gender.

Table 5.1 Focus group specialty crop producer participation by state and conference

State	Phase I	Phase II
GA	7	2
NC	5	0
SC	14	5
Conference	31	29
<i>Total</i>	57	36

Table 5.2 Focus group specialty crop producer participation by gender

Gender	Phase I	Phase II
Male	19	5
Female	7	2
<i>Total</i>	26	7

Figure 5.1 displays the breakdown of revenue of the farms represented by focus group participants during Phases I and II. 72% of the participants' revenue was less than \$100,000 annually.

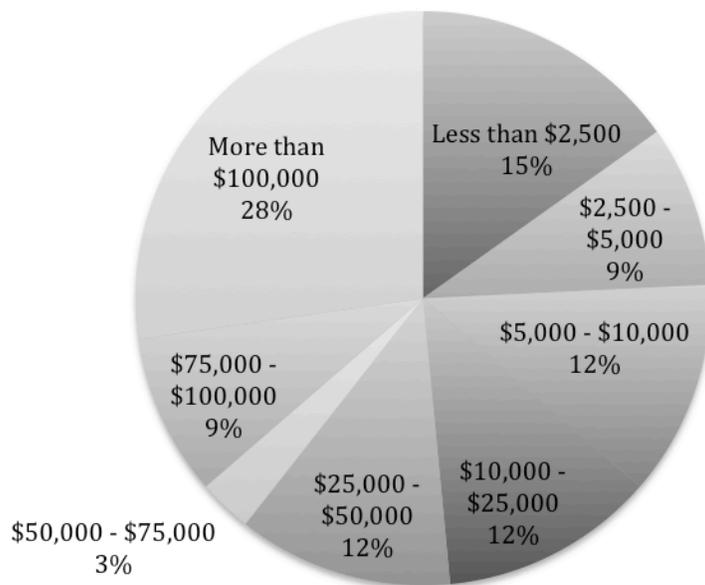


Figure 5.1 Farm revenues represented by Phase I and II participants

Figure 5.2 displays the percentage of Phase I and Phase II focus group participant's specialty crop production by product. The most commonly produced products were squash, tomatoes, beans, cucumbers, peppers, sweet corn, mixed leafy greens, cantaloupes, okra, broccoli, and watermelons.

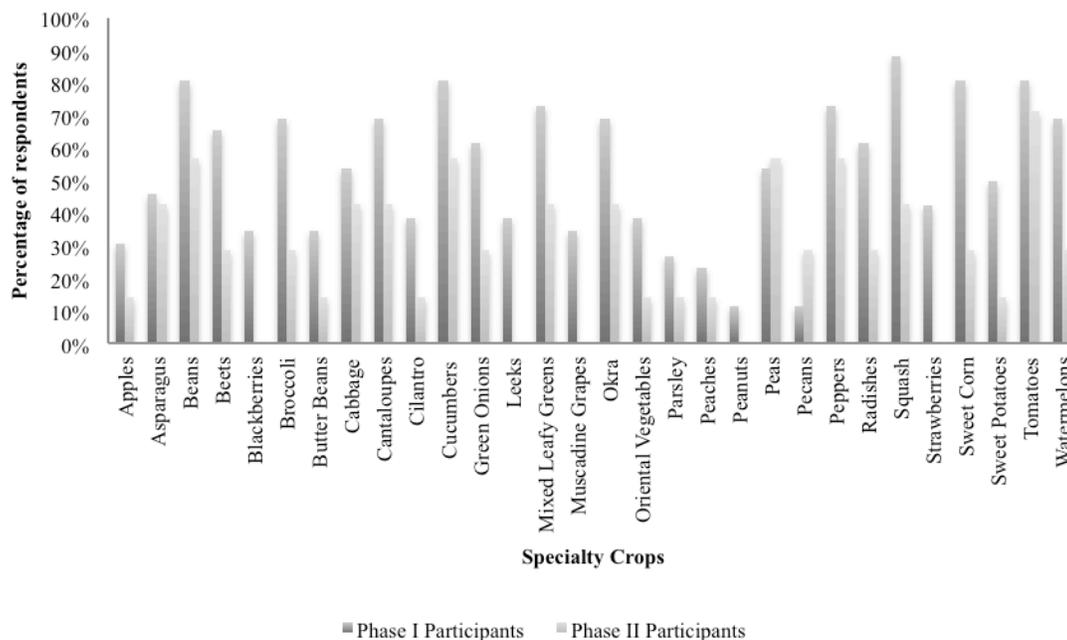


Figure 5.2 Participant’s specialty crop production, by product

In comparing demographic and business characteristics of the sample, and the characteristics of Southeast farmers as described in the 2007 Agricultural Census, this sample is considered to be generally representative. For example, 85 percent of farmers in the Southeast are male according to the Census. Including Phases I and II, 73% of participants were male. However, annual farm sales differ. According to the 2007 Census, around 84% of farms in the Southeast had sales of less than \$100,000 (ERS, 2012); only around 72% of this study’s participants had sales of less than \$100,000. This difference could be anticipated however, as the focus of this study was explicitly on small and medium sized producers.

## **Barriers in Farm to Institution Marketing**

Discussions with SME specialty crops producers revealed various barriers that they perceive as hindering them from selling directly to institutional foodservices. Barriers included such seasonality of demand and supply; the price received for product, and payment arrangements. Other barriers included insufficient production to satisfy the quantity demanded, buyer demand for specific product attributes, lack of access to value-added processing facilities, and insurance and certification requirements. Each of these barriers will be separately examined in the following discussion.

### Seasonality

The seasonality barrier has two facets: the seasonality of supply and the seasonality of demand. Due to climate conditions in the Southeast, small- and medium-scale specialty crop producers are limited in their harvesting times. The seasonality of supply is due climatic conditions limiting the availability of produce. In the Southeast, the producer's peak production season is typically spring through fall.

“...Our season is April through September.” (FG3, Prod3)<sup>1</sup>

Seasonality also proved to be a problem from the demand side because most institutions demand food year-round.

“In August they want squash...don't plant until the drought in July.... it makes it difficult to provide on a produce side what they are looking for” (FG3, Prod1)

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<sup>1</sup> References to focus group discussion are notated in parentheses with the number of the focus group (e.g. FG1 for focus group 1) and followed by the participant number (e.g. Prod1 for producer 1).

Institutions are accustomed to buying from wholesalers that purchase from numerous producers and frequently in different regions in order to offer year round supplies to their buyers. Schools, colleges, and universities are the largest group of institutional food demanders (Beery and Vallianatos, 2004), but when schools are not in session is when producers in the southeast harvest the majority of their crops.

“ ...Problem with the schools is the seasonal thing. I mean, most of us in the vegetable business, when school's out, we're still picking a lot of vegetables.” (FG1, Prod1)

### Infrastructure

The infrastructure required to meet the demands of larger institutional foodservice buyers was a concern to producers. A requirement of many institutions is value-added processing; for producers to be able to access this market without first going through a distributor very often requires them to do their own value-added processing. In order to wash, cut, sort, grade, package, and/or other institutional market requirements, facilities are required. Due to various regulations, a producer that wants to perform value-added processing (e.g., chopping, bagging, jams, jellies) must do so in a licensed or regulated processing facility. Establishing such facilities is costly and, given the relatively small volumes of production output generated Southeastern SME specialty crops producers is generally difficult to justify.

Most small producers are diversified in what they produce. Producers reported producing only a couple of specialty crops up to 25 different specialty crops. This diversification in production output raised another concern; even if a producer decided to invest in the proper facilities to process their produce, they would need many different

types of equipment and/or packaging for all the different types of products grown. For producers to be able to do any value-added processing beyond washing requires a certified facility. Further, even if a producer was able to access the additional facilities, the issue of complying with regulations was raised. Not only that but the difficulty for producers to become a certified processor follows suit. This was only a concern for producers that wanted to sell value-added products direct to a consumer.

Meeting customers' packaging requirements was another challenge for SME specialty crop producers. Packaging produce in a way in which the institutions would purchase their goods was difficult because of the specific requirements that institutional buyers demanded.

“I would add packaging...UPC, barcodes, all that sort of stuff, we pick it into containers in the field.” (FG 3, Prod2)

Some buyers require their produce be in a specific type of box or crate, with a special label and their barcode.

“We don't buy the wax cardboard boxes, I'm not spending all that money...that is one of the biggest drawbacks...they required those standard packaging boxes.” (FG3, Prod2)

Obtaining financing to expand a production operation also proved to be a challenge. It is difficult for the small producers to have sufficient cash flow to prove their worthiness for a bank loan. One producer (FG1, Prod1) spoke about the difficulty with the current market conditions in obtaining any type of loan from the bank.

A lack of land and employees to increase the scale of production was also a noted difficulty. Institutions need to purchase large quantities of the same product, but many producers do not have the ability to sufficiently increase the scale of their operation. Small producers felt that with their limited amount of land and number of employees, that the only way to make money was to sell to retail markets.

“So you have no more land... Try to figure out how to make more money out of less land. So you have to go retail.”  
(FG5, Prod7)

For producers that did have the ability to scale up production, a lifestyle conflict arose. Some small producers wanted to remain small regardless of the potential gains that could come from increasing the scale of production.

“We are kind of at that point in my family... we are getting to certain capacities of... got to make that decision, do you want to expand and maybe hire some part time help or temporary help... it is a lifestyle choice. And some people are going to want to make it, some people just say no thank you.” (FG5, Prod3)

The lack of appropriate infrastructure to handle direct farm to institution marketing was not just a barrier for producers; institutions also often lack the infrastructure needed to directly source produce from SME specialty crops producers. Schools, for example, often do not have the infrastructure to do any food preparation beyond heating and serving food. A former builder turned producer (FG8, Prod9) that built around 30 schools in the upstate of South Carolina spoke about the changes in building design. He recalled the time when the building of school cafeterias went from installing stoves to only installing warmers. Other producers also spoke of similar

experiences with their local school systems; school cafeterias have the capacity only for warming products emptied from a can or a bag.

“...Preparation for schools, food preparation, I mean most school staff about all they know how to do is open up a can and heat something up.” (FG5, Prod2)

The cafeteria staff does not have the skill set or infrastructure to handle any type of food preparation.

“It’s all about infrastructure. They’re not set up for fresh stuff. They’re set up for cans.” (FG1, Prod3)

### Providing Adequate Quantity

A reoccurring concern that producers had of being able to supply institutions was providing the quantity or volume in which the institutions need to purchase. Institutions, especially schools, colleges, and universities, need to purchase enough food to feed thousands of students each day, which is difficult or impossible for some small producers to accomplish on their own.

“I just don’t have the volume to supply them and that’s been my biggest hurdle.” (FG5, Prod7)

One participant (FG6, Prod3), that had experience selling to a school, spoke of the difficulty of supplying the large quantity that was necessary to meet the demands of an institutional buyer. From his experience, it took three days with the help of two people to be able to supply one school.

“They now about over 40,000 and it took two of us three days a week to supply that school. And there’s not a farmer in the room that can produce this much that fast and that regularly.” (FG6, Prod3)

Producers expressed the desire to begin small by selling to grocery stores. Frequently though grocery stores want producers to be able to supply them with enough produce for all of their regional stores which is just as difficult as trying to produce enough for a large school or school district. While maintaining a diversity of products was important to the small producers, because of the diversity producers felt it was not possible with their resources to produce the large quantities that business buyers demand.

“I could plant...20 acres of purple hull peas...that’s sort of the antithesis of our philosophy, we’re diversified.” (FG5, Prod6)

Other issues outside of the control of the producer that were discussed as limiting the capacity of SME specialty crop producers to serve as supplier to institutions. Among these issues, weather can play a large part in the yield of a crop. Producers do not always produce the yield that was expected and often come up short on supply, which could be a problem if they are committed to selling a certain amount to an institution.

“I mean what if you have very bad weather and then you can’t provide that product to the institution.” (FG19, Prod2)

For producers that were able to produce the large quantities, determining the right amount to produce proved difficult. It was noted that institutions do not keep as detailed of records as wholesalers do on previous purchasing history. So unless a producer has previous experience with a particular buyer then it is difficult to anticipate the demand.

“The schools can’t provide that information either. For some reason, they don’t have the records that a middleman has...they keep records that are just unbelievable for years. You can walk in there and say when do they eat cucumbers at school, he can pull it up.” (FG8, Prod6)

## Product Attributes

Not only was it difficult for small producers to meet the quantity demands of large institutional buyers, but also it was difficult to meet the quality requirements. Institutional buyers have to be very cautious about what they serve and if a small producer makes a mistake once that customer will be closed to them:

“I’ve also had the buyers come to my farm...They checked it for quality...Their reputation is on the line and if they are going to buy from you, they have to know that you are going to produce quality product. You have one chance to sell them something bad and you can guarantee you’re not getting any more orders. It’s a one and done.” (FG7, P4)

Institutional buyers want the products to have certain attributes such as a specific color, size, shape, and other characteristics that can be difficult for a small producer to provide consistently on a large scale.

“They don’t want the tomatoes pink or red, they want them in between those two colors before they will accept them.” (FG7, Prod4)

Another experience that a producer (FG3, Prod5) had with product attribute requirements was their demand for seedless watermelons. Based on the time of year and the cost of production, however, it was not feasible for the producer to fulfill this order.

“They asked us to pursue planting seedless watermelon, the cost of seedless watermelon is high, and again to meet their window when school is in session versus when it is the best to grow, you know is something that we looked at and didn’t pursue.” (FG3, Prod 5)

## Delivery Challenges

Institutional buyers are particular about how they want their purchases delivered. In some cases it is not possible for the producer to make the deliveries, nor do the buyers want numerous small trucks pulling up to their loading docks. The expense of providing delivery to buyers was not realistic for most of the small producers. The producers expressed their desire to be in the growing business and not in the delivery business.

“I’m not in the delivery business, I want to farm.” (FG7, Prod7)

The expense was not the only constraint to delivering to institutions, but also the time commitment. Most of the small producers were doing this on their own or with just a few employees, so sparing time to deliver was not possible. Another difficulty in delivery for small producers was that institutions are accustomed to receiving everything they need for the week on one truck. Institutions themselves are so shorthanded that receiving multiple deliveries by numerous small producers is not a viable option to some institutions.

“I don’t think I can be as convenient because they order fish from the Low country; they got produce, vegetables, meat, everything coming on one truck.” (FG7, Prod4)

## Price and Payment Arrangements

When focus group participants were asked of the challenges faced when selling direct to an institution price was a highly repeated barrier. One producer (FG2, Prod1) thought that for his operation the only way to make a profit was to go retail.

“If we’re going to sell to the schools, we’re not going to make anything, we’re going to lose money.” (FG8, Prod6)

When asked if they sell to institutions, and most focus group participants responded that they did not currently sell to institutions. A large reason was due to the price received for products and the payment schedule. A producer selling at a farmers market or roadside stand receives payment at the time of sale. When selling to institutions it could be one to two months, or longer, before payment is received.

“You are talking about selling to institutions, we all already know we are in the 30-60 day pay range so that is an important factor to us as far as being able to sell to them...when you start getting into these institutions; it’s a harder thing to get paid.”  
(FG7, Prod4)

The SME producers felt it was hard for them to move into the institutional market because they have been receiving good prices selling at a farmers market or even at a restaurant. Institutions, however, do not have the budgets to pay as high per unit prices. One producer (FG13, Prod1) spoke of his experience in selling to a local restaurant in which the owner paid at the beginning of the season for the seeds so that the producer would grow what he needed and the restaurant buyer was willing to pay at harvest for the high-end specialty produce.

One producer (FG16, Prod2) had a positive experience selling to a residential care facility. In his case, the price received was determined by using a local wholesalers weekly pricing sheet plus ten percent. This provided the producer with a relatively easy method to establish his prices each week.

“... [Wholesaler] sends me by email every week of an increase on their price sheets so I know what the wholesale price is on everything every week and I do wholesale plus 10 percent.”  
(FG16, Prod2)

Another producer (FG13, Prod3) also spoke about a positive experience in selling to a private residential care facility in which the buyer only wanted “the best” for her customers and had the budget to buy “the best”. This was a mutually beneficial arrangement.

However, not all stories of working with residential care facilities were positive. It appears that there are differences in producer experiences between working with independent and corporate owned facilities.

“There is not a challenge with working with the independently owned nursing homes or assisted living facilities, the challenge is working with the corporate owned.” (FG3, Prod1)

From the producers’ experience, working with corporate owned residential care facilities was difficult because they had the same barriers as other institutions, but selling to independently owned facilities was similar to the experiences producers had with restaurants. One producer (FG16, Prod2) spoke of his experience in which an independently owned residential care facility was willing to pay a premium to serve fresh, local food to the residents.

Those producers that had not had experience in selling to an institution were asked why they have not considered selling to institutions. Most of the responses were focused on their desire to sell retail and not wholesale. An organic producer (FG3, Prod4) said that from his personal experience the nursing homes he has been in were very cost conscious and would not pay a premium for local organic produce.

“All the nursing homes I have been in are really cost conscious...don’t want to do a premium for organic or fresh

local when they can get the same looking thing from California for \$2 less than that.” (FG3, Prod4)

### Insurance and Certification Requirements

When asked about any other barriers to the farm to institution marketing channel, producers repeatedly named insurance, specifically, food or farm product liability insurance as a barrier to their ability to access this market. They said the institutions and wholesalers were worried about the added liability of buying from small producers.

“With the liability issues, with most of those people you’ve got to have at least a million plus insurance policy.” (FG1, Prod3)

However, the producers had not had the same experience of restaurants requiring insurance. One producer (FG13, Prod3) said that his experience with trying to sell to an institution, school or hospital, is that they would not talk to him because they did not want to bear the risk, but he was already selling to a wholesaler that required liability insurance.

When one participant asked fellow participants about the level of insurance that most of the supermarkets required. In that meeting (FG7), participant responses varied from \$2.5 million to \$5 million. The group also discussed the cost of an insurance policy to the producer and values ranged from \$1,000 to \$1,500 per month.

Many participants spoke of the difficulty in affording an insurance that is required to just sell to a wholesaler. One producer (FG3, Prod1) expressed that the insurance required by a wholesaler was “outrageous” and continued on in the conversation to say,

“And it was just crazy for what we were producing and what we were making with our regular customers.” (FG3, Prod1)

It is important to note, however, this is cost information differs considerably from what is cited in the literature. Instead of \$1,000 to \$1,500 per month insurance cost reported in the focus group meeting, literature notes that the average cost for a small farmer is \$500 to \$1,500 per year (CFSC, 2012).

The challenge with having the proper certifications was continually repeated concerning the certification of processing facilities and in terms of farm certifications such as GAPs (Good Agricultural Practices). To be able to do the value-added processing that many institutions, especially schools, require producers felt they needed access to a certified kitchen. They are not allowed to do anything on their own farms without becoming a processor, and this requires that their facilities become certified.

“...At an institution everything is pretty much processed. I’m willing to do it but I don’t know if I’m willing to do it at home and go through all the certification.” (FG6, Prod4)

In terms of farm food safety certifications, some producers are finding it difficult because of the costly nature of complying with the requirements of some institutions, such as Good Agricultural Practices (GAPs) certification. Producers indicated that they understood that GAPs is here to stay.

“I think it’s going to get to the point where everybody like that is going to require [GAPs].” (FG1, Prod1)

Several producers, however, did not feel that it would be beneficial to spend the money it would require to become certified.

When asked if certifications, especially GAPs, were a current barrier for producers, the majority responded that they did not presently think so for their current

marketing channels. However, this was followed up with concerns that it was a barrier for being able to sell to institutions, and the point was raised that the producers thought that eventually everyone is going to have to become certified. One producer (FG16, Prod2) that had experience in selling to a residential care facility said so far they have not asked for any certifications for this type of facility, but he was confident they would eventually. Becoming GAPs certified or pursuing any type of certification was a concern for many of the producers. Some expressed a sense of it being overwhelming, while others spoke of concern over the costs associated with preparing for and becoming certified.

Even though there were concerns raised over the difficulties linked with obtaining different types of certifications, the producers did see some benefits. It seemed to be unanimous that becoming certified would help them in expanding into the institutional marketing channel because they felt it would, in some cases (e.g., certified organic), allow for a higher price being received for their products.

### *Results Compared to Existing Literature*

The barriers identified by the southeastern small- and medium-scale specialty crop producers were very similar to those previously identified in the literature. However, the existing literature is limited in that the majority of the studies have been focused on the Midwest or California. In many, but not all cases, barriers identified by those who participated in these focus groups in the Southeast are the same or similar to those in other parts of the U.S. In some cases, however, there were differences between the literature and the opinions of the southeastern specialty crop producers that participated.

Gregoire, Arendt, and Strohbehn (2005) used a survey to contact Iowa producers and gain an understanding of the opportunities and barriers facing the farm to institutional foodservices marketing channel. This study noted some of the barriers to this marketing channel to be year-round availability of products, lack of dependable market, price, ordering procedures, inability to meet quantity demanded, liability issues, local and state regulations, availability of labor, equipment and storage costs, and knowledge of buyers purchasing practices. Additional barriers that were not seen to be as big of an obstacle were delivery, communication with buyer, payment arrangements, food safety issues, and ensuring safe food supply. Peterson, Selfa, and Janke (2010) also surveyed producers and institutional foodservice buyers in northeastern Kansas. The most commonly identified barriers for selling direct to institutional foodservices were an insufficient quantity, seasonality of supply, delivery (means and time), insufficient time to produce/contact buyers, low price, unsure where to locate local buyers, buyers backing out, quantity demands, and liability insurance (Peterson, Selfa, and Janke, 2010).

While Gregoire, Arendt, and Strohbehn (2005) and Peterson, Selfa, and Janke (2010) identified many of the same barriers as those identified in the Southeast, some additional barriers were identified by Southeastern SME specialty crop producers that were not identified by these studies. These additional barriers included product attributes, lack of value-added processing facilities, and certification requirements.

Table 5.1 evaluates the barriers identified by the SME specialty crop producers during the focus groups and compares them to the literature. The barriers were compared

to studies examining barriers or obstacles from the producer side and from the institutional foodservice buyer side.

Table 5.3 Barriers identified in the study as compared to the literature

<b>Barriers Identified in the Study</b>	<b>Responses Supported by External Producer Studies</b>	<b>Responses Supported by External Institutional Foodservice Studies</b>
Seasonality/ Lack of year-round food availability	Gregoire, Arendt, and Strohbehn, 2005; Peterson, Selfa, and Janke, 2010	Gregoire and Strohbehn, 2002; Izumi et al., 2006
Lack of infrastructure for value-added processing		Izumi et al., 2006; Peterson, Selfa, and Janke, 2010
Quantity	Gregoire, Arendt, and Strohbehn, 2005; Peterson, Selfa, and Janke, 2010	Gregoire and Strohbehn, 2002; Izumi et al., 2006
Product attributes		Izumi et al., 2006; Peterson, Selfa, and Janke, 2010 (Quality)
Delivery	Gregoire, Arendt, and Strohbehn, 2005; Peterson, Selfa, and Janke, 2010	Gregoire and Strohbehn, 2002; Izumi et al., 2006; Peterson, Selfa, and Janke, 2010
Price	Gregoire, Arendt, and Strohbehn, 2005; Peterson, Selfa, and Janke, 2010	Gregoire and Strohbehn, 2002; Izumi et al., 2006; Peterson, Selfa, and Janke, 2010
Payment Arrangements	Gregoire, Arendt, and Strohbehn, 2005	Gregoire and Strohbehn, 2002; Izumi et al., 2006
Certification Requirements		
Insurance	Peterson, Selfa, and Janke, 2010	

The majority of the barriers identified in the focus groups were also discussed repeatedly in the literature. However, lack of infrastructure to provide value-added processing was not mentioned by any of the producers in any of the other studies. Izumi et al. (2006) and Peterson, Selfa, and Janke (2010) identified concerns from institutional foodservice perspective of a lack of proper facilities and labor to handle processing of whole, fresh vegetables, but did not cite it as a barrier to purchasing directly from a producer. Product

attributes was also not cited in the literature that examined the barriers from the producer side. Izumi et al. (2006) and Peterson, Selfa, and Janke (2010) did cite quality concerns as being a barrier from the foodservice perspective; however, these studies were unclear what the exact quality concerns were. Certification requirements were also not cited as a barrier in any of the examined producer or institutional foodservice studies. Kansas's producers, in the survey conducted by Peterson, Selfa, and Janke (2010), identified insurance as a barrier, but other producer studies did not cite insurance to be a concern. This difference could be due to the timing of the studies; Peterson, Selfa, and Janke is a more recent study and insurance as a barrier is an evolving issue. However, the majority of studies from either perspectives cited food safety concerns and/or liability as a concern, but none of the studies specifically named insurance except the Kansas producer survey (Gregoire and Strohbehn, 2002; Gregoire, Arendt, and Strohbehn, 2005; Izumi et al., 2006).

### **Needs Identified by Small-Medium Scale Specialty Crop Producers**

Throughout the conversations, the producers spoke about some of the needs they had to be able to successfully continue selling their products and/or made it possible for them to break into the institutional market. These needs ranged from community processing centers to assistance obtaining GAPs certification.

One producer (FG6, Prod2) spoke about a local cannery that the local producers rented in order to can their produce. The cannery helped them by telling them what to do and the producer did the actual canning and cleaning. The producers said this could be a feasible way to help producers with value-added processing. Small producers expressed

their need for access to this type of facility that could aid them in doing value-added processing.

Another producer (FG8, Prod9) spoke of a location in Florida that had a facility in which farmers bring in their produce and the producer does all of the value-added processing that needs to be done. The facility was equipped to do all of the sorting, grading, washing, packaging, and other various preparations and had coolers and storage. One South Carolina producer (FG8 Prod5) spoke about the need for his county to have a similar facility in which the local producers could bring in their fresh, un-processed produce.

“That’s kind of the model that we have been trying to work towards in Anderson County. Exactly what Producer 9 is talking about, where the producer can just bring it and sell it and be done with it.” (FG8, Prod5)

On a related note, the producers spoke of needing to implement a uniform recordkeeping system so that all producers are doing recordkeeping in the same way. Producers spoke about difficulties in keeping up with all the information that needed to be retained. Many producers were trying to write down everything by hand, and wanted an easier method that would allow them to simply fill in the blanks.

“...Coming up with a way that makes it easy for farmers. Check list or some way that we just have to write in the data or some forms.” (FG16, Prod1)

There was also much talk about difficulties in becoming GAPs certified and following the requirements of GAPs. The producers wanted the paperwork that is necessary for keeping proper documentation required under GAPs to be a standardized form.

“A downloadable form so where everything and everybody the same.” (FG16, Prod2)

On the subject of employees and the training of employees, the producers raised the need for a video that could be used by the producers to train their employees on the proper way to safely perform their duties. They thought it would be good to have a standard video that employees watched and signed that they watched it for liability purposes.

“Some type of training...to make a simple video or something or a CD that we could put in the computer and let them watch and sign saying they watched it or whatever you know.” (FG16, Prod2)

However, unknown to some of the producers, these resources are available through state extension services.

A point was made that the producers also wanted the State to implement a better system of communication to facilitate the marketing channel between the institutions and producers. Additionally, the producers wanted the institutions to specify up front the price they were willing to pay and the terms of payment. The producers wanted to better understand what it was going to take to be able to enter into selling to institutional foodservices. Producers also expressed a desire to know what is on the institutions' menus so they can plan what they need to grow to have the ability to meet the demands of the institutions.

Certification can be costly, so producers expressed the need for grants to help with the cost to the small producer to become certified.

“I’d like to see some grants for smaller producers.” (FG20, Prod1)

The USDA does have such a program; the Specialty Crop Block Grant Program provides grants to help offset the costs of certification. Importantly, however, these grants do not help producers offset the cost of making the needed changes to their facility layout and practices, which are required prior to certification. Some of the producers expressed feelings of being overwhelmed by GAPs, thus they want it to be simplified so it is easier to follow and clearer on how to make it through the certification process. The following producer spoke about his or her feelings after leaving a GAPs training:

“I left and felt overwhelmed. I thought I can’t do it, its not going to work and felt like I did it for nothing.” (FG16, Prod1)

Some producer though thought they would benefit from a list or small booklet that summarizes what is necessary to be in compliance with GAPs and the rules that the producers have to follow.

“If Clemson would sit down and you know, print out a list like this that tells us the GAP rules and stuff so you can sit down and read it.” (FG17, Prod1)

### **Solutions to Farm to Institution Marketing Barriers**

There were many challenges producers felt hinder the direct marketing of farm to institutions, but producers were vocal in giving ideas of potential solutions to many of the barriers that were raised. However, most of the solutions discussed cannot be accomplished through the efforts of a single producer and many of the solutions suggested will require research to explore their feasibility.

One of the most noted barriers was the lack of a facility to handle value-added processing. Small producers do not have the ability to build a processing center or install a certified kitchen on site. To be able to get into the institutional markets, however, it was often required that they be able to do some value-added processing. Producers wanted to at least have the ability to perform some light preparation such as chopping and bagging. One of the solutions that the producers mentioned was a community processing facility in which all the local producers could take their produce. Some producers even mentioned the idea of a mobile unit that could be moved from farm to farm so that the producers would not have to transport their produce. One producer (FG16, Prod2) spoke about wanting to eventually build his own facility on-site that would be for his personal use and for the use of the other producers in his community.

Another potential solution was the use of certified kitchens in restaurants. A producer (FG16, Prod1) mentioned that one of her restaurant customers offered the use of his or her kitchen. She declined because she does not currently have the time to do any value-added processing, but this could be a potential option for other producers looking for a way to do some processing. Another producer (FG15, Prod1) had arrangement with a restaurant and was using the restaurant kitchen to do some value-added processing.

Another offered suggestion was to get producers to join together to form a marketing cooperative (FG2, FG5, FG6, FG15, FG16, FG19). Joining together in a cooperative could provide the producers with the ability to put their products together to meet the quantity demands of the institutions. A cooperative could also have the potential to remedy the previously noted delivery barrier. Delivery was perceived as being

difficult for small producers who do not have the time or money to buy the necessary delivery equipment. Also, producers felt that institutions do not want multiple small trucks pulling up to their loading dock and dropping off load after load of produce. Forming a producer cooperative is cited in the one study (Gregoire, Arendt, and Strohbehn, 2005) as being a possible solution or remedy. However, producers often are unwilling or resistant to join into a cooperative with other producers and reluctant to combine products together to fill orders or for delivery.

“I think there needs to be a selection process for the members.”  
(FG5, Prod3)

“The pricing that is important and that is something that I learned this year, that you got somebody coming in there and dumping and they just got corn and they want to sell it that put all of the other farmers out of the corn business that day.” (FG5, Prod5)

Another suggested marketing option that complements the marketing cooperative suggestion was an online system through which institutional buyers could place their order. After the order was placed, a local cooperative of producers could pool their output to fill the order. One producer (FG15, Prod2) talked about a group in Georgia that was currently doing something similar in which the producers gave an estimate of what they could produce, and once an order was placed they let the other producers know what was needed and then they each brought their box to the farmers market. Once at the farmers market, the order was put together and the buyer would pick it up. The producer received a check at that point in time. This approach would address some of the delivery concerns and problem of producers having to wait a relatively long time period to receive payment from an institution. The drawback to this solution is it requires that producers have access

to computers with Internet and requires delivery to a specific location that could be difficult. In some cases this could also mean combining one producer's products with other producers' products, which often causes concern for producers.

“I think it depends on who I co-oped with because if someone is using chemicals and harmful things to, to grow their produce I wouldn't want mine next...If you take away all the work of not using then.” (FG16, Prod1)

Contractual agreements were seen as a solution to some producers and as a barrier to others. The producers that considered a contract to be a solution thought it would be a guarantee for them that all of their produce would be sold. They saw it as a reassurance that it would be a definite sale and the terms of the sale would be agreed upon up front. This could also eliminate the barrier that was raised about the payment arrangement concern in which producers do not want to wait 30 to 60 days to receive payment. Limiting the potential benefits of a contract is the institution may not have the ability to change the terms of the payment. A contract could also offset small producer difficulties in being able to supply the desired amount. The contract could specify that the institution would purchase from the producer directly if the producer has the product at a specified time, but if they know they are not going to be able to meet the institutions demands then the producer would let them know in advance, and the institution could buy from a wholesaler.

“...Or maybe the contract could say if you don't have it, let us know a week ahead of time and we can buy it from US Foods.” (FG7, Prod6)

“They contracted my entire broccoli. If the sun never comes out and the temperature is below 30° here it will actually start growing. At some point we will be able to sell it to them; they

know by Friday what they can pick up the following week, approximately how many pounds.” (FG7, Prod4)

Another approach, which may help to remedy some of the farm to institution marketing channel barriers, would be for producers to start small. Instead of trying to access a large school district, some producers suggested starting with a smaller institution and using word of mouth to eventually gain access to larger markets. Smaller institutions could also help alleviate some of the other barriers that were a problem with some of the larger buyers such as the quantity, delivery, and payment arrangements.

It is important to note that potential solutions to the barriers do not only need to stem from producers; producers felt there were things the institutions could also do to facilitate the use of this marketing channel. If institutions adapted their facilities and trained their employees to be able to handle some light preparation, it would enable producers to sell whole, unprocessed produce to the institutions. Currently, in most institutions food is heat-and-serve with the employee opening bags and cans. To be able to serve local, fresh produce the employees would need the facilities and training to handle a small amount of food preparation. However, this is more costly to institutions, both in the facilities and labor that would be necessary.

A way to make it more convenient for the institutional buyers to place orders with producers directly was also identified. This could be done with the same system that was discussed in conjunction with a cooperative that involves using computers to place orders. If it is not made to be easy for the buyers they will not pursue that channel. The institutions could also aid in reducing some of the barriers by adapting their menus to

reflect the seasonal items. The literature cites increasing the communication between producers and institutions as being a remedy for the lack of year-round food availability. Increased communication could facilitate dialogue about what is available at different times of the year and the amount that could be available (Gregoire and Strohbehn, 2002).

### **On-Farm Traceability Systems Traceability**

Small- and medium-scale specialty crop producers are exempt from traceability requirements under the Tester-Hagan Amendment. It is possible, indeed likely, however, that to limit their potential legal liability, institutional and other foodservices are likely to one day require traceability of their produce suppliers. The following discussion will look at the motivation for SME producers to implement a traceability system. The challenges of implementing and maintaining a traceability system, and specifically the costs such programs will also be examined.

#### *Motivation to implement traceability*

Through the implementation of a traceability program, a producer potentially has the ability to track all inputs into the production process and to track production outputs (i.e. produce) through the entire supply chain until its consumption. In the event of a problem, there is the ability to trace back to the source of contamination, and quickly identify and remove affected produce.

One producer (FG17, Prod3) spoke about a colleague that was forced to throw away thousands of dollars worth of lettuce after a California lettuce scare. The producer's lettuce was not contaminated, but consumers would not purchase the lettuce because of

the fear of contamination. Another producer (FG19, Prod6) talked about what an ideal traceability program would offer – in his view and it would have the ability to pinpoint the source of a contamination without affecting other producers that are selling safe produce.

“The ideal system you can pinpoint the day, the product and where it came from on that particular day.” (FG19, Prod6)

According to the producers, one of the main motivations to implement traceability was the ability to reduce risk and limit liability. One producer (FG17, Prod5) spoke about how he felt like small producers are at a higher risk due to the fact that they do not have the practices in place to decrease the risk of contamination. The worry for small producers is if faced with a threat of contamination it could potentially put them out of business. This argument was countered by another producer (FG17, Prod6) that felt it does not matter the size of the operation because all producers should be concerned with reducing the risk of contamination for all products, which are being consumed by the public.

“You still need to know what you want, where you want it, what you’re putting into it, how people would handle it, be whether a \$10,000 a year operation or a million dollar a year operation.” (FG17, Prod6)

Also, traceability can be reinforcement to the producer when a buyer makes a claim against their products. For instance, one producer (FG20, Prod7) told of problems with schools claiming a product had spoiled after the buyer inaccurately handled the product. If the producer had a traceability system he would be able to verify the date in which the produce was delivered and be able to determine if the buyer was at fault. It is a

verification process to potentially shift the liability to the guilty party in the event of contamination.

Implementing traceability could also allow for standards to be put in place pertaining to the practices that producers use throughout the growing process. Keeping documentation could allow for the identification of unsafe growing practices.

Implementing traceability has the ability to give producers a closer look at where their resources are being used and determine how to better use those resources in the future. This also has the potential to improve production. A traceability system would also aid producers with their accounting processes, which was pointed out by a producer (FG19, Prod2) through the use of the detailed documentation. Another producer (FG17, Prod2) spoke of the ability to identify various constituents within the production process that have the ability to be amended, such as underperforming employees or product defects.

Producers spoke of previous outbreaks such as the *E. coli* on spinach. Traceability would allow for the quick identification of the source of contamination in the event of an outbreak. Concerns were also brought up about contamination due to animals and humans being carriers of bacteria while in the fields.

“...Major problem in this country and that’s what caused the *E. coli* and the spinach in California a couple of years ago, was wild pigs.” (FG17, Prod3)

As more and more people handle the product throughout the various stages of the supply chain, contamination before it reaches the consumer was also another concern. This can be seen in the literature; for example, there was a study examining the Hepatitis A outbreaks in Mexican green onions. Green onions are a labor-intensive crop that can be

touched by as many as 9 people during production, which puts the product at a high risk for contamination (Calvin, Avendaño, and Schwentesius, 2004). Through the use of traceability there is the ability to identify the full supply chain process of a product and easily identify a source of contamination in the event of a foodborne illness.

“You still need to know what you want, where you want it, what you putting on it, how people would handle it, be whether a \$10,000 a year operation or a million dollar a year operation.”  
(FG17, Prod6)

Traceability also has the capability to provide proof of origin for food for the consumer. Some producers raised concerns over produce being falsely sold as “local”. A producer (FG16, Prod2) told of his experience at a farmers market in which the sellers did not grow the produce that was being sold, nor did they have knowledge of the point of origin.

The producers saw traceability as being beneficial because it gives confidence to the consumer and peace of mind to the producers and sellers. However, the producers that do not currently have a traceability program in place said that it was because their buyers have not asked this of them. Many expressed their willingness to look into implementing a program if their buyers began requesting for them to do so.

“We haven’t had anybody asking for it.” (FG15, Prod3)

### *Challenges to implementing and maintaining traceability*

The logistics of being able to trace everything that is produced is a challenge to small producers. For example, a bag of spring mix contains multiple types of produce so the challenge is keeping track of all of the necessary identifying information.

Documentation was one of the most talked about challenges by the producers. They foresee this to be a difficulty during the implementation process. The documentation challenge has two facets, the monetary cost and the time cost to implement and maintain. The cost of keeping up with all of the necessary information is going to be very difficult for most small to medium-scale producers to afford. To implement a traceability system it will require some producers to most likely purchase a computer system, software, barcode scanners, and so on.

“Eventually a software program...would be needed.” (FG15, Prod1)

The time that will be necessary to keep track of all of the paperwork is overwhelming to most small producers. They expressed that the only way they will be able to keep up with the documentation is to hire at least one new employee with the primary purpose of documentation. Many of the small to medium-scale producers are already working with a small number of employees, if any at all, so the concern was the lack of time available for the additional task of recordkeeping.

To abide by these requirements it is going to require additional labor. To implement and maintain a successful traceability system it could require more hours in a day than the small producers felt they could spare. To keep up with the documentation that is necessary, the producers thought it would require them to hire at least one new part-time employee.

Another issue related to documentation is the change in production practices that it will require to facilitate the necessary recordkeeping. Small producers sometimes have

to harvest over multiple days to fill an order so the problem becomes how to appropriately document the information. This was followed by how to keep the information tied to the product throughout the supply chain process. For small producers a difficulty was believed to be the creation of a numbering system that would represent all of the relevant information about a product. Another documentation challenge was concern over how to properly identify which employee handled each product at all times and how to be able to follow that through the entire production process. For some small producers the labor used is not consistent every day, so that can add to the difficulty of being able to trace all the information. During peak times it may be necessary for a producer to bring in additional help. A seasonal worker will most likely not have the same level of training so this could prove to be problematic in keeping proper documentation.

“My biggest challenge is documentation.” (FG16, Prod1)

Many of the producers did not currently use any type of identifying information, such as batch numbers, in their production process. One producer (FG15, Prod1) said that once he harvests the product it is lightly cleaned and visually inspected. After a visual inspection it is sorted into boxes for customers and then the boxes are sealed and put in storage to wait for delivery to the buyer. The only information he put on the box was a count of the number of units of produce in the box. Their buyers had not yet requested additional identifying information, and implementing a traceability system would be a very intensive process since most small to medium-scale producers would be starting from the beginning.

A big challenge that the producers identified was how to keep control over the wild animals in the fields. The goal, of course, is to keep animals that might serve as vectors for diseases, out of the field. The producers are unsure of how to keep the birds from flying over and the rabbits and squirrels from running through.

“The little song birds and stuff that fly over, and you know what they’re doing.” (FG17, Prod8)

However, wild animals around the farm are not the only naturally occurring challenge. Many producers use a local water source for irrigation, but the concern is what is happening upstream that the producers could potentially be putting onto their fields. To ensure a safe water source producers must have their water routinely tested.

For producers to have complete control and document who and what is going in and out of their fields multiple components of their production practices will have to change. For example, a large concern for many producers was restroom facilities for employees while they are in the fields. It is important to have facilities available for employees to use during working hours and to ensure that they have proper access to a hand washing facility. The issue of restroom facilities also leads into proper employee training. Employees would need to be trained on the appropriate way in which to conduct themselves while in the fields and handling any produce. Employee training would be an additional cost, such as training materials and the time required for proper training. Even after training the producer has to spend time overseeing that the employees are properly abiding by the training.

“You would have to make sure that your workers were trained too.” (FG21, Prod3)

There was also concern over the traceability of problems that happen out of the producer's control. For example, if a truck was previously delivering chicken that leaked but was not properly documented and cleaned, then the produce that is carried next in the truck runs the risk of contamination. In the event of an outbreak the produce will be traced back to the farm. The producer followed procedures but was contaminated after it was out of the producer's control. A producer can do everything properly and have good documentation that traces the product throughout the production process, but if the consumer did not handle the product properly then the safety of the food is still at risk. One producer (FG19, Prod2) spoke of an experience in which he watched a restaurant chef slice unwashed tomatoes and then cut-up unwashed peppers with the same knife. There is also difficulty in proving negligence because many buyers/food handlers do not properly handle the produce once it is in their possession.

As the law currently states producers that are selling direct to consumers do not have to implement traceability so at the farmers market many producers will not be following the same food safety standards. This is a concern to those that do implement a traceability system because of the reasons mentioned previously. At the farmers market a consumer may have touched a product that sat in the back of a truck, under a tree for a few days before coming to market and then touch a product that does have traceability and was grown using good growing practices.

### *Costs to implementing and maintaining traceability*

The cost to initially implement and the cost to maintain a traceability system is potentially sizable for a small or medium-scale specialty crop producer. Producers already feel pressure to receive a high enough price for their product, but an increase in the costs of production means a decrease in the profit unless buyers are willing to pay a premium for traceability.

A variety of changes will need to be made by many SME producers in order to implement a traceability system. One of the biggest challenges and costly portions of implementation is the documentation aspect. Very few small and medium-scale specialty crop producers have a sophisticated method for tracing their produce. Some of the producers looked into purchasing software and they estimated it was upwards of \$1,000, which did not include any type of barcode scanner, printer, or computer.

“I have looked into a retail software, it just costs like \$1000 just the software. And then you gotta have your price gun, which, is about 70-80 bucks.” (FG15, Prod1)

New technological upgrades were not the only changes that were seen as being potentially very costly to producers. For many producers they will likely need to make upgrades to reduce the risk of contamination and increase the safety of the product. Upgrades described by several producers would include building restroom facilities and hand washing stations that would be easily accessible to field workers. Others said they might have to install a fence to keep out wild and domestic animals that potentially carry diseases that could contaminate the produce.

Product labeling with all of the traceable information was identified as a costly challenge because it would require the purchase of new equipment or hiring a company to do the label printing. If a producer decided to do the label printing on-site then there would be the initial cost of the equipment for printing the labels and the machine for applying the labels, but also the reoccurring cost to purchase the labels and ink used in the printing process.

The small and medium-scale specialty crop producers did not employ many full-time employees. Labor is brought in when it is needed, but many producers feel that to keep up with the documentation that at least one part-time employee would need to be hired. A few producers felt like they could get by with a part-time person a few hours a week while others felt they would need someone on a more regular basis. One producer (FG16, Prod2) estimated the cost to maintain traceability to be about four or five percent of his gross sales. A producer (FG17, Prod2) with a traceability system already in place said he or she has a full-time employee that spends half of each business day working on the traceability portion of the operation.

Another costly challenge related to labor is the time and money that it will take to properly train employees on how to follow the new traceability procedures. Employees will need to be trained on the proper way to handle and document the production process. One producer (FG16, Prod2) estimated that employee training could cost anywhere from \$100 to \$150 a year just for the materials to properly train, but there is also the time it will take to train an employee on proper protocol.

Packaging is going to be a large financial burden in maintaining a traceability system. For some, they said it will require new bins and crates for packaging and storing because some of the producers said they currently reuse their cartons that are used to harvest and in some cases they reuse the delivery bins. To ensure full traceability they felt like they will need to clean and purchase new bins more frequently. The cost of new boxes can be quite expensive. Some producers estimated the cost of boxes to be around \$500 to \$1,000 a season.

Monetary costs are not the only costs that producers will face in implementing and maintaining a traceability system; time is a large factor. Time put into the process of adapting the farm to being able to trace all produce and the time spent on maintaining the traceability after implementation.

### **Implications for the Farm-to-School Marketing Channel**

It could be said that the Southeast is behind other regions in the U.S. in their efforts to develop the farm to school marketing channel. Studies on farm to school in the southeast are virtually non-existent; however, other regions in the U.S. are looking at this marketing channel. A study in the upper Midwestern and northeastern U.S. looked at the Farm to School Programs from the foodservice professionals' perspective. The study revealed that, for the school districts that were interviewed, the reasons for participating in a Farm to School program and purchasing locally grown products direct from a producer were because the students liked it, the price was good, and it provided support for local farmers (Izumi et al., 2010). The findings of this study that the price of the product being cheaper or equal is in contrast to some of the other literature that cites price

as a barrier to this marketing channel (i.e. Gregoire, Arendt, and Strohbehn, 2005; Peterson, Selfa, and Janke, 2010).

A Michigan study sent out a survey to K-12, private and public, school foodservice directors across the state. It was found that purchasing from a local farmer allows access to fresher food, supports the local economy, higher-quality food, good public relations, and ability to purchase small quantities. However, from the perspective of the Michigan foodservice directors, the challenges with purchasing from a local farmer were food safety, reliable supply, ordering method, delivery, seasonality of Michigan fruits and vegetables, cost, and quality (Izumi et al., 2006).

The purpose of the Farm to School program is to bring local foods into schools and bring about a sustainable market for the farmers. Farm to School programs also provide farm and nutrition education to the students. The goal is to increase each student's consumption of fruits and vegetables and teach them about a healthy, balanced diet and about the origin of their food. Additionally, a purpose is to bridge the gap that has been identified in previous studies between small, local farms and institutions (National Farm to School Network, 2012).

In 2007, the Georgia Organics organization established the Georgia Farm to School program. In South Carolina, three school districts have joined together with Carolina Produce to establish the Grow With Me Farm to School Program. The focus in South Carolina has been a slow introduction of Farm to School and has begun with a focus on providing locally grown items in snacks and not as much on lunches yet. North Carolina is ahead of Georgia and South Carolina with the first instance of a Farm to

School program dating back to 1997. Originally, the program started in Western North Carolina through a partnership between the Department of Defense and the North Carolina Department of Agriculture and Consumer Services. The program began with Red and Golden Delicious apples and after success in the western portion of the state it spread to the rest of the state. By 2004, all school districts in NC had access to a NC Farm to School program (National Farm to School Network, 2012).

Appalachian Sustainable Agriculture Project (ASAP) has a relationship with University of North Carolina – Asheville (UNCA) and they are also working to get local foods into cafeterias. Their program not only gets local food to the students, but also includes getting information about the local food. The program has seen the purchasing of cafeteria meals increase since the introduction of certified Appalachian Grown in cafeterias (ASAP, 2012).

### **Implications for Farm-to-Health Care Marketing Channel**

Appalachian Sustainable Agriculture Project (ASAP) is not only working with schools, but also with hospitals. ASAP works with Mission Hospital and Park Ridge Hospital in North Carolina (ASAP, 2012). Health Care Without Harm is also working all over the world to bring fresh fruits and vegetables to their patients. Some suggestions for solutions to increasing consumer (patients, visitors, employees, and staff) access to fresh produce are ideas such as weekly farmer's markets at the hospital, hospital gardens, and building a relationship with local growers to purchase locally (Health Care Without Harm, 2012). The Healthy Food in Health Care Pledge is being signed by many

healthcare institutions that signify their commitment to work toward implementing some of the solutions to serving fresh, local products (Health Care Without Harm, 2008).

Duke University in North Carolina has implemented a farm to hospital program known as LIFE FOR LIFE®. The program has a portion that works to bring fresh fruits and vegetables direct to the consumer. During the spring and summer, between nine and twelve farmers sell their products to as many as 600 shoppers weekly (Beery and Vallianatos, 2004).

### **Study Limitations**

There are limitations to qualitative research in general and specifically for focus groups. In regard to qualitative research, there is less control over the data that is obtained as compared to quantitative data (Morgan, 1988). Focus groups allow for dialogue to flow between participants, which can often lead to unpredictable outcomes. In contrast to the use of a survey, participants are more limited in their ability to vary their answers from those expected by the researcher. Another limitation of focus groups is the possibility of a sample that is not representative and this is due to the differences in participant personalities. Some people are not as willing/able to meet with a group of peers to discuss a topic (Gibbs, 1997). Focus groups are also not always fully confidential because participants are sharing their identity and views with the other participants. Participants may be reluctant to share sensitive or personal information with a group (Gibbs, 1997).

There were also limitations to the study. A large portion of the participants did not have previous experience selling to institutional foodservices or very limited experience,

which was expected based on the region. The sample size was also relatively small with only 57 during Phase I and 36 during Phase II. Participants were from varying sizes of small- and medium-scale farms and a distribution of male and female that is consistent with the 2007 Census of Agriculture findings. Participants also represented a variety of specialty crops, 49 different crops were identified on the participant questionnaire.

However, there is the limitation that the participants cannot be representative of all SME specialty crops producers in the Southeast due to the relative small number of producers included in this study. Further, even among those who did participate, there is likely to be some self-selection bias in that those who participate are more likely to be those who think they have something to gain by their participation (i.e. information) beyond the cash incentive. It is thus anticipated that those producers who are successful and are experiencing few barriers in accessing this channel would be less likely to make the time to attend such meetings. Finally, as with other qualitative research, results of this study are not generalizable to states outside of the examined region or to market access challenges of SME producers of products other than specialty crops.

## CHAPTER SIX

### CONCLUSIONS AND FUTURE RESEARCH

This chapter explores the barriers faced by small and medium-scale southeastern specialty crop producers in the direct farm to institutional foodservice marketing channel, and the impact of traceability requirements by institutional buyers. Focus groups were conducted in two Phases; Phase I concentrated on the barriers and solutions in direct farm to institutional foodservice marketing, and Phase II concentrated on the impact of a traceability requirement by institutions on the direct marketing channel between small- and medium-scale specialty crop producers and institutional foodservices.

During Phase I of the study it was found that the barriers were numerous, but the producers offered some remedies that they thought could potentially alleviate the discussed barriers. The literature also offers some solutions to barriers as identified in other studies that surveyed producers in the Midwest and California. Price received for produce and the payment arrangements with an institution were concerns due to the budget constraints on the part of the institution, and the lag time involved with receiving payment. Seasonality was also a large concern, especially with schools, due to the standard growing season of a southeastern producer conflicting with the school calendar, and the time that schools demand produce. Quantity and specific product attribute concerns were also prevalent among the producers. It is also difficult for producers due to the specific needs of institutions to purchase in large quantities at one time and their

demand for a particular size, shape, and/or color. Other barriers included value-added processing demands, and insurance and certification requirements by institutional buyers.

Solutions to some of the discussed barriers, and needs of the producers to enable them to enter into this marketing channel were also discussed during Phase I. To alleviate the price and payment arrangement barrier, the idea of a contractual agreement was raised in which the contract would spell out up front the terms of the arrangement. If institutions created seasonal menus to reflect the growing season of local produce that was seen as having potential to ease the seasonality barrier. An idea to solve the quantity and specific product attribute concerns was the creation of a marketing cooperative in which the producers in an area could put their produce together to make it possible to fill large institutional foodservice orders. A producer cooperative was also identified in the literature as a possible solution along with the idea of a facilitator to ease quantity, delivery, and payment arrangement barriers (Strohbehn and Gregoire, 2002; Gregoire, Arendt, and Strohbehn, 2005).

During Phase II, it was found that the motivation to implement a traceability system was, in short, the ability to reduce risk and limit liability. For small- and medium-scale producers this will not be without challenges. One of the most repeated challenges was the cost, monetarily and time, of implementation and maintenance. Many producers expressed concern for implementation requiring costly upgrades to their farm such as new technology equipment purchases. Technology purchases came from the documentation challenge that was overwhelming to several of the small producers. Keeping up with the documentation requirement of an effective traceability system would

require time of the producers that that felt was already in short supply. In some cases producers felt they would need to hire at least one additional part-time employee, which would be another cost on an already tight budget for many of the SMEs.

The challenges in the direct farm-to-institutional foodservice marketing channel are numerous, but the potential benefits are abundant. Traceability requirements present a large barrier, but it can be overcome. As the qualitative results show, there is potential to transcend the perceived barriers, and for this to be a beneficial marketing channel to both producers and buyers.

### **Recommendations for Future Research**

Thus far, research in the direct farm-to-institutional foodservices marketing channel has been limited, particularly in regards to the southeastern small- and medium-scale specialty crop producers. Future research is needed to obtain quantitative data from a larger number of producers to achieve more generalizable results. A survey reaching more producers could also give more insight into the opinions of producers with more experience in selling to institutional foodservices. Additional research is also needed to explore the barriers from the institutional foodservice buyers perspective. A study of this type could allow for a comparison between what the producers perceived to be barriers and actual barriers for the buyers purchasing directly from the producers. Additionally, research into the solutions identified in this study is needed. The feasibility of the solutions discussed by the producers is currently unknown and cannot be accomplished through the efforts of a single producer.

### *Future Extension Programs*

Future extensions programs are also necessary. A traceability documentation system that is accessible to all producers was identified as a remedy to the challenge of implementing a traceability system. A software program and/or education for producers on how to document information for a traceability system have the potential to make a transition into the implementation of a traceability program smoother for producers that want to pursue direct to institutional foodservice marketing. There are programs and resources that are currently available to producers, but countless producers do not appear to know they exist. Education with the producers about the existing programs and resources that are already available to remedy some of the perceived barriers is also necessary.

## APPENDICES

Appendix A

Recruitment Script

**INFORMATION CONCERNING PARTICIPATION IN A RESEARCH STUDY**  
~ CLEMSON UNIVERSITY ~

**BRIDGING SPECIALTY CROPS PRODUCERS AND INSTITUTIONAL CONSUMERS**  
**PRODUCER MEETING INFORMATION SHEET**

**DESCRIPTION OF THE RESEARCH AND YOUR PARTICIPATION**

You are invited to participate in a research study conducted by Dr. Kathryn Boys, Dr. Elizabeth Kunkel and X (*insert relevant student name*). The purpose of this research is to discover and explore challenges faced by specialty crops producers in their effort to market their produce to institutional food buyers. In particular, this study will examine anticipated changes and challenges to producers and buyers from adhering to regulations and market changes set forth through the Food Safety Modernization Act. For the purpose of this study, institutions include organizations such as schools, hospitals, acute care facilities, correction facilities etc., but exclude restaurants and grocery stores.

Your participation will involve engaging in a moderated group discussion with other specialty crops producers (*institutional food buyers*). Breaks will be provided for refreshments and lunch. Including this break time, it is anticipated that at the most this meeting will be completed in four (4) hours.

**RISKS AND DISCOMFORTS**

There are no known risks associated with this research. For any reason you may, of course though, skip or refuse to answer any questions.

**POTENTIAL BENEFITS**

As a result of your participation we will obtain a better understanding of barriers to the efficient function of the marketing channel between small specialty crops producers and institutional food buyers. Results from this study will be widely disseminated and may contribute to policy setting and non-government organization program efforts in NC, SC, GA and other areas. Further, at the end of the meeting, you will be provided an honorarium of \$50 to help offset travel and other costs incurred due to your participation.

**RECORDING OF FOCUS GROUP MEETINGS**

To facilitate analysis of information collected during the focus groups, these meetings will be aurally recorded and later transcribed. To help ensure participant privacy, focus group transcripts will refer to participants by number rather than by name. Recordings made during these focus group meetings will not be used for any purposes other than for information to be used for the research project described herein.

Clemson University's Research Data Access and Retention Policy requires that these recordings and transcripts be retained by the project's Principal Investigator (Dr. Kathryn Boys) for five (5) years after the findings of this research project have been published. These recordings and transcripts will be housed in a secure location within the premises of Clemson University facilities.

**PROTECTION OF CONFIDENTIALITY**

While it is unlikely that any sensitive material will arise during our focus group meetings, we are nonetheless committed to doing everything we can to protect your privacy. Personal information, such as your name and address, will not be collected and demographic information collected for this survey will not be able to be linked back to study participants. Your identity will not be revealed in any publication that might result from this study.

**VOLUNTARY PARTICIPATION**

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study.

**CONTACT INFORMATION**

If you have any questions or concerns about this study or if any problems arise, please contact Dr. Kathryn Boys at Clemson University at 864.656.4345. If you have any questions or concerns about your rights as a research participant, please contact the Clemson University Office of Research Compliance at 864.656.6460.

Appendix B

Producer Registration Form

**BRIDGING SPECIALTY CROP PRODUCERS AND INSTITUTIONAL FOOD BUYERS  
PRODUCER FOCUS GROUP REGISTRATION FORM**

**BACKGROUND INFORMATION ABOUT YOUR ORGANIZATION**

1. What is your role in your organization?

\_\_\_\_\_

2. State and county where you farm:

\_\_\_\_\_

3. How long has your organization been in operation? (years) \_\_\_\_\_

4. Your Gender (*please check*): M\_\_\_\_ F \_\_\_\_

5. On average, how many hours per week do you dedicate to your farm and related sales activities?

\_\_\_\_\_

6. Do you hold an off-farm job (a job in addition to your work on the farm)? Yes\_\_\_\_ No \_\_\_\_

7. How many workers are employed by your organization?

Full-time \_\_\_\_\_ Part-time \_\_\_\_\_ Seasonal (*please note which months*) \_\_\_\_\_

8. Does your organization make use of any special production practices (i.e. organic)? If so, please describe:

\_\_\_\_\_

\_\_\_\_\_

9. What, if any, certification programs does your organization participate in? (i.e. GAP, GHP, Traceability, etc.) If so, please describe:

\_\_\_\_\_

\_\_\_\_\_

10. What is the highest level of education that you have completed? *Please check only one.*

- Less than high school
- High-school / GED
- Some College
- College Degree
- Graduate School / Advanced Degree

11. Approximate gross annual revenue of your organization? *Please check only one.*

- |                                              |                                               |
|----------------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> Less than \$2,500   | <input type="checkbox"/> \$25,000 - \$50,000  |
| <input type="checkbox"/> \$2,500 - \$5,000   | <input type="checkbox"/> \$50,000 - \$75,000  |
| <input type="checkbox"/> \$5,000 - \$10,000  | <input type="checkbox"/> \$75,000 - \$100,000 |
| <input type="checkbox"/> \$10,000 - \$25,000 | <input type="checkbox"/> More than \$100,000  |

12. What items does your organization produce?

Produce

- |                                                         |                                              |                                         |
|---------------------------------------------------------|----------------------------------------------|-----------------------------------------|
| <input type="checkbox"/> Apples                         | <input type="checkbox"/> Cucumbers           | <input type="checkbox"/> Peas           |
| <input type="checkbox"/> Asparagus                      | <input type="checkbox"/> Green Onions        | <input type="checkbox"/> Pecans         |
| <input type="checkbox"/> Beans (Snap, Italian, Variety) | <input type="checkbox"/> Leeks               | <input type="checkbox"/> Peppers        |
| <input type="checkbox"/> Beets                          | <input type="checkbox"/> Mixed Leafy Greens  | <input type="checkbox"/> Radishes       |
| <input type="checkbox"/> Blackberries                   | <input type="checkbox"/> Muscadine Grapes    | <input type="checkbox"/> Squash         |
| <input type="checkbox"/> Broccoli                       | <input type="checkbox"/> Okra                | <input type="checkbox"/> Strawberries   |
| <input type="checkbox"/> Butter Beans                   | <input type="checkbox"/> Oriental Vegetables | <input type="checkbox"/> Sweet Corn     |
| <input type="checkbox"/> Cabbage                        | <input type="checkbox"/> Parsley             | <input type="checkbox"/> Sweet Potatoes |
| <input type="checkbox"/> Cantaloupes                    | <input type="checkbox"/> Peaches             | <input type="checkbox"/> Tomatoes       |
| <input type="checkbox"/> Cilantro                       | <input type="checkbox"/> Peanuts             | <input type="checkbox"/> Watermelons    |
| <input type="checkbox"/> Other: _____                   | <input type="checkbox"/> Other: _____        | <input type="checkbox"/> Other: _____   |
| <input type="checkbox"/> Other: _____                   | <input type="checkbox"/> Other: _____        | <input type="checkbox"/> Other: _____   |

Other Agricultural Activities Produced

- |                                                                 |                                                             |
|-----------------------------------------------------------------|-------------------------------------------------------------|
| <input type="checkbox"/> Eggs                                   | <input type="checkbox"/> 'Hobby' Livestock (non-commercial) |
| <input type="checkbox"/> Nursery, Greenhouse, Floriculture, Sod | <input type="checkbox"/> Grains, Oilseeds                   |
| <input type="checkbox"/> Hay                                    | <input type="checkbox"/> Cotton and Cottonseed              |
| <input type="checkbox"/> Tree Nuts                              | <input type="checkbox"/> Aquaculture                        |
| <input type="checkbox"/> Other: _____                           | <input type="checkbox"/> Other: _____                       |

13. Rate your familiarity with proposed legislation under FSEA. (Please circle the number that best represents your familiarity)

Very familiar				Not At All Familiar
5	4	3	2	1



Appendix C

Discussion Guide – Phase I

**BRIDGING SPECIALTY CROP PRODUCERS AND INSTITUTIONAL FOOD BUYERS  
FOCUS GROUP DISCUSSION GUIDE**

**BEFORE THE FOCUS GROUP BEGINS**

The moderator will have all participants complete an organizational survey and the Internal Review Board (IRB) forms. She and/or a project team member will review with each individual as they are arriving.

**CONVENING THE FOCUS GROUP**

The moderator will introduce herself and other project team members who are present. She will share with the group the purpose of the study, make statements about confidentiality, describe how the focus group will be conducted and the ground rules.

**INTRODUCTION**

1. Overview
  - a. Welcome participants
  - b. Identify self
  - c. Explain what a focus group is
  - d. Explain the role of the moderator
  - e. Review rules
  - f. Review the consent form
  - g. Review the demographic survey
  - h. Explain the purpose of the focus group sessions
  - i. Get started
2. Tell us your name, the name of your farm, and what you enjoy most about farming.
3. To what extent, if any, are your family members involved in your operation?

**LEAD-IN (TRANSITION) QUESTIONS**

4. ‘During an average week, how much time would you estimate that you spend on marketing your product? Marketing includes activities such as processing, transportation, communication, advertising and sales.
5. What types of customers do sell to? Farmer’s Markets, retail, etc.  
*Write responses on flip charts.*  
*Make sure to mentally tally responses that are institutions.*

**KEY QUESTIONS - PERSONAL EXPERIENCE WITH MARKETING PRODUCE TO INSTITUTIONS**

*Remind participants what “institutions” are included in this study. .*

6. “X (number)” of you have sold to (institution); and “X (number)” have sold to (institution). Those of you who have sold to institutions, can you share your experiences?

*Tract challenges on flip chart.*

*After all challenges are listed, probe for further explanation if needed.*

7. What other challenges could arise when selling to institutions?

*Note: Benefits may be mentioned during this discussion. Make a note of these benefits to use as a starting point for the next question.*

8. What are the benefits to selling to institutions?

9. What are your thoughts about forming a selling or distribution co-op?

10. Would you sell for a discounted price if you had a guarantee your customer would buy a certain amount?

*If respond yes, prompt to see what size of discount they would be willing to accept.*

#### **CONCLUSION**

11. Do you have any thoughts or comments that you would like to share with us? Have we missed anything?

*If “value-added” processing center is not mentioned during discussion, prompt for it.*

*If time permits, explore with the participants how they decide how to allocate their produce across their different customers. (I.e. how do they prioritize their customers?)*

*Thank participants.*

Appendix D

Discussion Guide – Phase II

**BRIDGING SPECIALTY CROP PRODUCERS AND INSTITUTIONAL FOOD  
PRODUCERS  
PRODUCER - FOCUS GROUP DISCUSSION GUIDE**

Following the 'Introduction' section heading, instructions to the Moderator and/or Assistant Moderator are provided in italics.

**BEFORE THE FOCUS GROUP BEGINS**

The moderator will have all participants complete an organizational survey and the Internal Review Board (IRB) forms. She and/or a project team member will review these with each individual as they are arriving.

**CONVENING THE FOCUS GROUP**

The moderator will introduce her/himself and other project team members who are present. S/he will share with the group the purpose of the study, reaffirm confidentiality practices, describe how the focus group will be conducted and the discussion ground rules.

**INTRODUCTION**

*Provide Overview of Focus Group Meeting:*

- a. Welcome participants*
- b. Identify self*
- c. Explain what a focus group is*
- d. Explain the role of the moderator*
- e. Review discussion rules*
- f. Review the consent form*
- g. Review the demographic survey*
- h. Explain the purpose of the focus group sessions*
- i. Get started*

1. Tell us your name, the name of your farm, where are you located, and your top three (3) products.
2. How many employees do you have and how many are family members?

**LEAD-IN (TRANSITION) QUESTIONS**

3. What types of customers do you sell to?

*Prompts: Farm stand, pick your own, restaurants etc.*

**KEY QUESTIONS – TRACEABILITY**

4. Please describe your record keeping system. What information do you usually provide on your out-bound shipping statements?
5. Please describe your understanding of the concept of 'traceability'.
6. Do you currently have a traceability program in place? If so, please briefly describe it.
7. For those of you who have traceability in place, when and what motivated you to introduce it? For those without a traceability program in place, did you ever consider it, and why did you decide not to implement one?

*Note: Skip next question ( no. 8) if **no** producers have a traceability program in place.*

8. For those that have traceability in place, what challenges did you face in introducing and maintaining this program?

9. Assume for a moment that your organization was required to implement complete traceability – from your field through to your loading doc. What do you perceive the greatest challenges to this to be?

9a. Let's examine this food system. How would you implement traceability at each of the following stages of food handling?

*Note: Adjust these categories as needed to accommodate differences in producer production systems*

- i. Field Crew
- ii. On-site Inventory
- iii. Sorting, Grading, Packing Product
- iv. Cold Storage
- v. Preparation for Shipment
- vi. Other?

9b. What do you think the cost would be of implementing a traceability program such as that described in each of the previous steps (from part 9a)?

#### **KEY QUESTIONS – MARKET FACILITATION**

10. If they were available, which of the following services would you be interested in?

a) A marketing co-op that would help assist with and coordinate member's traceability programs?

b) A marketing co-op that would help to sell member's produce to local institutions?

c) An community kitchen made available for value added processing?

If interested in a kitchen, what ownership structure would you prefer:

i) Owned by a co-op and made available to coop members?

ii) Owned by a company or organization and the facility could be rented out on an hourly basis?

iii) Other?

11. Are there any other marketing-related information or assistance which you would like/use but do not currently have available?

#### **CONCLUSION**

12. Do you have any thoughts or comments that you would like to share with us? Have we missed anything?

*Thank participants.*

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