KNOWLEDGE, PERCEPTIONS, AND BEHAVIORS OF FLORIDA EXTENSION AGENTS REGARDING COMMUNITY FOOD SECURITY

By

ALISON EVE LUTZ

A THESIS PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE

UNIVERSITY OF FLORIDA

2006

ACKNOWLEDGMENTS

There are many people who gave me support and love throughout this process.

First, I would like to thank my graduate committee members. I was very lucky to have Dr. Nick Place as my advisor and my graduate committee chair. His guidance, support, and encouragement were invaluable during my time spent at the University of Florida. I enjoyed working with him, not only on my thesis study, but on other projects as well. He had an ability to help me stay on track and focus on my accomplishments. Dr. Place is a wonderful advisor and educator. His constant availability and willingness to help not only helped me get through graduate school, but also made it a joy.

Dr. Mickie Swisher helped me make this study something of which I could be proud. I truly enjoyed working with her. She presented me with challenges, and supported me as I worked through them. Dr. Swisher has an ability to make me think about the world in a new way. I was very lucky to have had her support and enthusiasm for my study.

I would also like to thank Dr. Mark Kistler. His ideas, feedback, and assistance were so helpful in this process. He always had time to meet and discuss my work.

My family deserves a heart-felt thank you. I would like to thank my father for all the late-night statistics sessions. His patience and help gave me the confidence I needed to pursue the challenges that lay before me. I would also like to thank my sister, Gerse. She was a constant source of comedic relief. Her positive attitude and enthusiasm for life always cheer me up when I am down. I would like to extend a thank-you to my

grandmother, Evelyn, for being so proud of me. She has always been a role-model for me. Her devotion to her family is one of the biggest assets I have in my life. I would also like to thank my mother for being proud of me. I appreciated her support, advice, and encouragement throughout this process.

A very big thank you goes to my friend Beth. She has been a steadfast and wonderful friend since I met her. I consider myself lucky to have such a great best friend. Throughout my graduate career, she has been my support, my friend, and my psychologist. I could never have made it through these years (or many others) without the late-night phone calls full of laughter, tears, and everything in between.

I would also like to thank Nick Fuhrman. He has been a constant source of support and encouragement. He was always available for advice, suggestions, feedback, or as a shoulder to cry on.

I thank all of my friends that I have been so lucky to make in my life. I looked forward to coming into the graduate offices everyday because of all the great fellow students in the department. I would like to thank the original 'crew': Abbe, Jaime, and Marshall. I was so lucky to meet such wonderful, honest, and funny friends when I first arrived at the University of Florida. I thank Brian, Carrie, Renee, Elio, Katy, Katie, and Jessica for making the bat cave such a special place.

I would also like to thank the Department of Agricultural Education and Communication at the University of Florida. I am so very grateful that I had the opportunity to work and learn in this department. The department has offered me opportunities for growth and improvement that are not only reflected in this thesis, but also in my life.

Lacy Park and Jodi DeGraw both provided support and guidance throughout this process. Lacy helped me to begin my graduate program and Jodi helped me to complete it.

I would like to thank Mimi Stanford who let me “steal” the book that set me on the path for my thesis. My gratitude also goes to Graham Stanford who helped with some of the technical aspects and helped me to keep perspective.

Finally, I would like to acknowledge Bluegrass and Noah. They have been the most faithful and wonderful companions. Their understanding and patience with my hectic schedule are so appreciated. They are the ones who keep me grounded and make my house a home.

TABLE OF CONTENTS

LIST OF TABLES

FIGURE

Abstract of Thesis Presented to the Graduate School
of the University of Florida in Partial Fulfillment of the
Requirements for the Degree of Master of Science

KNOWLEDGE, PERCEPTIONS, AND BEHAVIORS OF FLORIDA EXTENSION AGENTS REGARDING COMMUNITY FOOD SECURITY

By

Alison Eve Lutz

August 2006

Chair: Nick T. Place
Major Department: Agricultural Education and Communication

Cooperative Extension in the United States has historically focused on aspects of the food system. Extension continues to address the needs of consumers, producers and other stakeholders in the food system, both in the United States and internationally. In order to modify or improve current extension programming, it is essential to first look at the knowledge and perceptions of extension's front-line responders regarding the food system and food system issues. This study focused on the relationship between extension and the concept of community food security.

The purpose of this study was to examine the knowledge, perceptions, and behaviors of Florida Extension agents regarding community food security in their counties. The goal of this study was to identify and describe extension agents' knowledge and perceptions of community food security. A second goal was to identify current levels of organizational support for extension agent participation and current levels of participation in these types of programs.

The study used the theory of planned behavior as a theoretical framework. This theory is an attempt to predict human behavior by looking at a person's attitude toward the behavior, their intention to perform the behavior, their perceived social norms, and their perceived social control. The study used this framework as a lens through which the data was examined. This study was descriptive in nature, but included data analysis that was predictive in nature.

The researcher sent a questionnaire to a census of all Florida Extension agents (N = 324). There was a response rate of 62% (n = 201). The researcher utilized a pre-notice postcard and multiple-wave reminder emails to increase response rate.

The results of the study indicated that Florida Extension agents had a wide range of knowledge. The results also showed that respondents did not view community food security issues as extremely negative or extremely positive in their counties. Respondents indicated, overall, they were receiving moderate to low amounts of organizational support to participate in community food security-focused programs. In addition, respondents indicated that they were interested in receiving organizational support for these types of programs in terms of the availability of an established curriculum and the specialist support. Finally, the results showed that 41% of respondents have not participated in any type of community food security program within the last year. Based on these results, the research made recommendations for extension agent education on community food security. The researcher also recommended an increase in organizational support for community food security programs.

CHAPTER 1
INTRODUCTION AND PURPOSE OF THE STUDY

Introduction to the Study

The modern food system in the United States is a complex, internationally connected network of industries and markets that is continuously changing and growing to meet the needs of its consumers. Cooperative Extension Service programming works to meet the needs and address the issues of both producers and consumers in this system. The Cooperative Extension Service has had a focus on agriculture, the food system, and the community since the establishment of land-grant universities in 1862. "Many extension programs relate to the food and fiber system from best management practices in agronomic crops and livestock to nutrition, diet, and health and resource management" (Thomson et al., 2003, p. 201). Extension is constantly evolving, adapting, and improving its educational programs to meet the needs of its communities and clientele. "Extension's mission today focuses strongly on empowering people to solve their own problems" (Seevers, Graham, Gamon, & Conklin, 1997, p. 238). Extension has sometimes sought collaborations or inter-organizational relationships to help best meet the needs of the community and work toward their mission.

The overarching goal of this study was to identify and describe the knowledge levels and perceptions of Florida Extension agents regarding community food security. A secondary goal was to identify (a) current levels of organizational support for extension agent participation in community food security-focused programs, and (b) current participation in these types of programs. One of the anticipated outcomes of this

study was to explore the commonalities and possibilities for collaboration between Florida Extension and other organizations focused on community food security (CFS). A second goal was to provide information regarding Florida Extension agents' perceived needs as a first step in improving the way Extension meets the community food security needs of its clientele. There is currently a lack of research in this area. However, there is a potential relationship between extension and CFS, bridged by the initiatives set forth by the USDA.

The United States Department of Agriculture, the federal partner of Extension, recognized a specific need in the field of agriculture and food systems by adding the Community Food Security Act to the 1996 Farm Bill. Extension agents' knowledge and perceptions regarding CFS are primary elements in understanding the relationship between Florida Extension and CFS. Their knowledge and perceptions may also lead to the improvement or revision of current Extension programs. An understanding of Florida Extension agents' knowledge of CFS and their perceptions of CFS in their respective counties is essential in determining their needs.

The purpose of this study was to measure Florida Extension agents' knowledge about CFS, their perceptions of local CFS issues of salience, describe their perceptions of organizational levels of support in addressing those issues, and identify current levels of participation in CFS-focused programs. The researcher collected the data for this research study with a web-based questionnaire distributed to a census population of Florida Extension agents and county extension directors.

Background and Significance of the Problem

The relationship and similarities between the 11 national emphasis areas of the United States Department of Agriculture - Cooperative State Research, Education, and

Extension Service (USDA-CSREES) and the concepts considered essential to CFS served as the basis for this study. This chapter will describe the concepts of CFS, the 11 national emphasis areas for the USDA-CSREES, and the seven overarching programmatic goal areas for Florida. This information provided the prerequisite context for establishing the need to examine Florida Extension agents' programming needs through the measurement of their knowledge and perceptions of CFS.

Community food security is a concept that, while relatively new, has come to the forefront for several initiatives and areas of focus for the United States government. The definition of community food security is most often "a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (Hamm & Bellows, 2003, p. 37). USDA-CSREES, one of the most prevalent government organizations that deals with CFS issues, outlined 11 areas of national emphasis. Five of these areas directly address issues that are inherent to CFS. USDA-CSREES identifies five knowledge areas that involve some of the main concepts addressed in the Hamm and Bellows (2003) definition of CFS. These concepts are: food access, safe food, culturally acceptable food, nutritionally useful food, sustainable systems by which food is produced and distributed, community independence and functionality, and social justice.

The Cooperative Extension Service works to identify food producers' and consumers' needs within a community and provide educational programs to meet those needs. "It is the [extension] educator's responsibility to identify and prioritize the needs of learners in the community or geographical area and to decide how best to allocate

resources such as time, money, energy, and personnel to achieve maximum results" (Seevers et al., 1997, p. 98). Extension educators use several methods to determine appropriate programming in order to meet those needs. These methods include needs assessments and evaluations. The purpose of these methods is to learn about the situation and context of a community or to examine the process and the functionality of current programs.

The Pendleton Community Garden Project in Oregon is an example of a food system-focused program that was a response to community needs. Umatilla County Extension agents delivered this program to youth in the community in order to prevent them from engaging in risk behaviors such as drug use and sexual activity (Voluntad et al., 2004). The program provided food to members of the community in need while "providing at-risk youth with constructive, positive activities" (Voluntad, Dawson, & Corp, 2004, ¶ 2). The program used a facet of CFS, community food production, to address two identified needs within the community: youth risk behaviors and hunger among community members. This example illustrates extension's involvement in both the community and the community food system.

One must understand the knowledge and perceptions of the extension agents serving a community to begin identifying the needs of that community. In addition, the extension agents must be aware of their levels of knowledge and perceptions of CFS. Finally, extension administrators must be aware of agents' perceptions of systematic barriers to properly facilitate extension's contribution to addressing CFS issues in their communities (Thomson, Radhakrishna, & Inciong, 2004). This study explored the knowledge levels and perceptions of Florida Extension personnel to begin to identify

programming needs, areas for improvement, and possibilities for collaboration with outside organizations in Florida. Previous studies have shown that national leaders of CFS focused programs and CFS stakeholders at the county level generally agree on CFS concepts (Pelletier, Kraak, McCullum, Uusitalo, & Rich, 1999). There is a plausible connection between the concepts inherent to CFS and Florida Extension.

Thomson et al. (2003) conducted a study in which they examined Pennsylvania Extension agents' perceptions of local food system issues. The study found significant differences in extension agent perceptions based on program and other characteristics. The researchers suggested that programming resources were perceived as an organizational barrier to local food systems-focused programming in Pennsylvania (Thomson et al., 2003). In addition, the researchers stated that such variables as gender, program focus, and extension region were important to consider when designing extension educational programs for local food system issues (Thomson et al., 2003). The current study looked at similar variables in the context of Florida Extension, focusing both on local food system issues and other issues inherent to CFS.

Florida Extension

Researchers defined extension as a governmental agency that provides service to anyone who requests service, utilizing informal education about topics generally grounded in agriculture, home economics, and similar areas (Seevers et al., 1997). USDA-CSREES identifies five of the 11 national emphasis areas for Cooperative Extension programming as: agricultural systems; economics and commerce; families, youth and communities; food, nutrition, and health; and natural resources and environment (National Emphasis Areas, 2005). Florida Extension functions both at the statewide and the county levels. Florida Extension has seven statewide goal areas in

addition to the USDA-CSREES 11 national emphasis areas. Each of these goal areas has several underlying components called focus area teams. These statewide goal areas include: enhancing and maintaining agricultural and food systems; maintaining and enhancing Florida's environment; developing responsible and productive youth through 4-H and other youth programs; creating and maintaining Florida landscapes; assisting individuals and families in achieving economic well-being and life quality; achieving economic prosperity and community vitality in Florida's urban and rural communities; and, promoting professional development activities designed to enhance organizational efficiency and effectiveness (Statewide Goals and Focus Areas for 2004-2007, 2004). Extension promotes these goals and serves the communities by providing usable, accessible, and relevant research-based information.

Theory of Planned Behavior

This study will examine Florida Extension personnel's perceptions of local CFS issues and of areas of support or opposition within Florida Extension in the context of intention to implement, adjust, or discontinue CFS-focused Extension educational programs. Fishbein and Ajzen developed the theory of reasoned action (1975) in an attempt to understand and predict intentional human behavior by measuring the integration of attitude toward a behavior, intention to perform the behavior, and subjective norms. Ajzen eventually added perceived social control to the model and the theory evolved into the theory of planned behavior (Ajzen, 1991). This theory serves as the basis for this study because it suggests that a great deal of intentional human behavior can be predicted based on these four components. The four parts of the theory comprised the lens through which the data was examined, although this study did not strive to measure these components. The reason the researcher chose the theory of planned

behavior and not reasoned action was due to the addition of perceived social control. An integral part of the study was an examination of organizational levels of support for participation in CFS-focused programs within the extension system. These influences were interpreted as social control over a behavior. The researcher considered the identified levels of personal interest in organizational support to participate in CFS-focused programs as perceptions of a behavior. The general application of the theory of planned behavior can provide insight into predicting and understanding intentional human behaviors such as participating in certain types of programs (Ajzen, 1991).

Statement of the Problem

Understanding extension agents' knowledge of CFS and their perceptions of local CFS issues is a primary and essential step in determining extension agents' programming needs and areas in need of improvement. Researchers have not examined the current perceptions of Florida Extension agents. The study about Pennsylvania Extension educators and local food system issues by Thomson et al. (2003) revealed that while most extension agents found food system issues to be "important" in their counties, they found limited support from certain aspects of extension administration. They also found that extension agents needed to incorporate their own perceptions of "importance" with the real needs of their communities (Thomson et al., 2004). Pelletier, McCullum, Kraak, and Asher (2002) found that while CFS-focused groups in New York were interested in working with local extension agents on CFS issues in their community, extension agents were unable to participate in these programs because they experienced barriers in the form of heavy work loads or insufficient administrative support. However, in a similar study several years prior, researchers found that New York Extension administrators were willing to have extension personnel involved in a CFS conference (Pelletier et al., 1999).

These studies suggest that while there is some information regarding current relationships between extension and CFS concepts and issues, there is much that remains uncertain.

The researcher conducted this study to shed light on the current relationship between Florida Extension and CFS issues in Florida counties. The researcher designed this study with the results of the Thompson et al. (2004) and the Pelletier et al. (2002) studies in mind. This study measured Florida Extension agents' knowledge and perceptions of CFS and identified levels of organizational support for participation in CFS programs to address local Florida county needs.

Purpose and Objectives

The purpose of this study was to measure Florida Extension agents' knowledge and perceptions of CFS and to identify current levels of organizational support for participation in CFS programs to address local Florida county needs. In addition, the researcher performed this study in order to identify current levels of participation in CFS-focused programs.

- Objective 1: To identify Florida Extension agents' levels of knowledge regarding community food security
    - Objective 1a: To describe Florida Extension agents' levels of knowledge regarding community food security
    - Objective 1b: To compare knowledge levels among groups of Florida Extension agents based on demographic characteristics
- Objective 2: To identify Florida Extension agents' perceptions of community food security in their respective counties
    - Objective 2a: To describe Florida Extension agents' perceptions of community food security in their respective counties
    - Objective 2b: To compare Florida Extension agents' perceptions of community food security based on demographic characteristics

- Objective 3: To identify Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs
    - Objective 3a: To describe Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs
    - Objective 3b: To compare Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs
- Objective 4: To identify Florida Extension agents' levels of interest in receiving different dimensions of organizational support for participation in community food security-focused programs
    - Objective 4a: To describe Florida Extension agents' levels of interest in receiving different dimensions of organizational support for participation in community food security-focused programs
    - Objective 4b: To compare Florida Extension agents' interest levels in organizational dimensions of support based on demographic characteristics
- Objective 5: To identify and describe Florida Extension agents' current levels of participation in community food security-focused programs
- Objective 6: To identify and describe associations between dependent variables

Operational Definitions

- COMMUNITY. For this study, this term will refer to geographic groups and local infrastructure as it relates to food system and food security issues. For a further discussion on this term, please see the 'Community' section in Chapter Two.
- COMMUNITY FOOD SECURITY (CFS). This study will use the definition proposed by Bellows and Hamm (2003): "a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (p. 37).
- COMMUNITY FOOD SECURITY-FOCUSED. This term refers to programs that have one or more dimensions of community food security as the topic for the program.
- CULTURAL ASPECTS OF THE FOOD SYSTEM. In this study, this phrase will refer to the concepts of culturally acceptable food, culturally acceptable food acquisition practices, and culturally acceptable food preparation practices.
- EXTENSION. This study will use the definition described by Seevers et al (1997). Extension is a "public-funded, non-formal, educational system that links the

education and research resources of the United States Department of Agriculture, land-grant universities, and county administrative units" (p. 1) in order to provide research based information and education to meet the needs of the communities it serves.

- EXTENSION AGENT. "A change agent (or extension agent, extension educator) is an intermediary between the developers of the original form of a technology and its end users" (Dragon, 2005, p. 13). In this study the change agents are the extension agents in Florida. The end users would be the community stakeholders in the counties they serve.

- FOOD SECURITY. The most widely referenced definition of this term is the one proposed by the World Bank (1986): "access by all people at all times to enough food for an active healthy life."

- FOOD SYSTEM. For this study, this term will be defined using the definition proposed by Gillespie and Gillespie (2000). Their definition "includes the foundations for food production, the social aspects of consumption, and relevant government and other policies, as well as the actual growing, processing, and distributing of substances that results in foods that people consume" (Gillespie & Gillespie, 2000, ¶ 3).

- IMPORTANCE. Likely to determine or influence events; significant.

- Local food system. In this study, this term will be synonymous with the definition for "community food system" proposed by Gillespie and Gillespie (2000): "that part of the larger food system that is geographically located within a community" (¶ 8).

- ORGANIZATIONAL LEVELS OF SUPPORT. In this study, this phrase will refer to perceptions of emotional, administrative, or material barriers or bridges to specific behaviors (i.e. engaging in or establishing an extension program).

- PARTICIPATION. In this study, this term will mean taking an educational or developmental role in a particular Extension education program.

- SALIENCE. This study will use this phrase as used by Pelletier et al (1999): "the meaning and intensity of concern associated with an issue" (p. 402).

- SOCIAL JUSTICE. For this study, this term will refer to problems regarding food security, hunger, and "the adequacy of wages and working conditions for all those who earn their livelihoods from the food system" (Winne, n.d., p. 2).

- SUSTAINABLE AGRICULTURE. The USDA has defined this term as "an integrated system of plant and animal production practices having a site-specific application" (USDA, 2004). These applications will have long term effects such as satisfying human food and fiber needs, improve environmental conditions, sustain the

economic viability of farm operations and improve the quality of life for farmers and communities (USDA, 2004).

Limitations of the Study

The following are potential limitations for this study:

- The results of this study are specific to the Florida Cooperative Extension Service and may not be generalizable to other situations.
- The researcher distributed the instrument to the population via the internet. Some limitations of this medium of distribution are noted in Dillman (2000). Specifically, technical issues may prevent the respondent from properly viewing the instrument, internet connection speed may affect how the respondent sees the instrument, and the respondents' computer literacy may affect how they fill out the questionnaire.
- The researcher used data reduction methods to analyze the collected data. The researcher decided to use these methods due to time and resource limitations. These methods have the potential to decrease precision in the study.

Summary

This chapter justified the need for and provided the background on this research study. The importance and relevancy for this research has been addressed. The chapter described the relationship between the concept of community food security and the goals and emphasis areas of Cooperative Extension, both at the national and state levels. In addition, this chapter outlined the purpose and objectives for this study.

CHAPTER 2
REVIEW OF THE LITERATURE

This chapter provides an overview of the literature about community food security and its relationship with current extension programming efforts in Florida. The chapter begins by describing the history and development of the Extension system in both the United States and in the state of Florida. The chapter then explains the development and the components of community food security. The researcher provides an outline of areas in which community food security and the goals and objectives of extension converge and provides examples of current extension programs that focus on the different aspects of community food security. The chapter also provides the development and applications of the theoretical framework for this study. This chapter consists of the following sections: Extension Systems in the United States; The Extension System in Florida; CFS; Defining Community; CFS and the Cooperative Extension Service; and, Theoretical Framework for the Study.

Extension Systems in the United States

History of Extension in the United States

The Morrill Act of 1862 was a response to the belief that schools with an agricultural focus would not receive funding (Sanders, 1966). It specified land to be sold to generate funds that would create colleges to teach the agricultural and mechanical arts (Seevers et al., 1997; UF/IFAS, 2003). This act created land-grant universities. These land-grant institutions lacked the materials necessary to teach agricultural and mechanical arts in most cases. The Hatch Act established agricultural experiment stations for these

colleges in 1887 (UF/IFAS, 2003). Morrill's second act in 1890 increased funding to the states and stipulated that states with land-grant schools that refused admission to non-white students establish alternative land-grant schools of equal quality for non-white students. The government required that the states distribute the land-grant funds equally between the two schools (Program Development and Evaluation Center, 2005a). The Bankhead-Jones Act of 1935 included schools in Puerto Rico, the Virgin Islands, and Guam in the land-grant status and the Native Indian Legislation included Tribal Colleges in 1994 (Seevers et al., 1997; UF/IFAS, 2003).

In 1914, the Smith-Lever Act established an official relationship between the extension service and the USDA in order to provide federal appropriations to the extension service and to "extend the benefits of federal aid to those colleges established under the acts of 1862 and 1890" (Seevers et al., p. 35). The land-grant institutions and the United Stated Department of Agriculture (USDA) developed a partnership in education through this act. The memorandum of understanding denoted the roles, relationships, and expectations of state and USDA responsibility in this partnership. Seevers et al. (1997) explained the criteria in this memorandum. They explained that it was the state's responsibility to establish an extension service within each state as an arm of the land-grant university. Each state had to appoint an extension director to overlook all extension work in the state. The state's responsibility included all financial aspects of state extension work. Each state was responsible for education and programs in the areas of agriculture, home economics, and 4-H. The USDA was responsible for establishing a Federal Extension Service, appoint a Secretary of Agriculture, provide program leaders

for the areas of agriculture, home economics, and 4-H, and supervise educational programs of the USDA.

Extension in the United States Today

The federal extension partner in the United States is now the Cooperative State Research, Education and Extension Service (USDA-CSREES). Congress combined the extension service with the Cooperative State Research Service as a result of the Department Reorganization Act in 1994. USDA-CSREES is one of four USDA agencies with a Research, Education and Economics (REE) focus. The mission of USDA-CSREES is to "to advance knowledge for agriculture, the environment, human health and well-being, and communities by supporting research, education, and extension programs in the Land-Grant University System and other partner organizations" (CSREES, 2005a, ¶ 5). USDA-CSREES expanded its focus from the three areas of agricultural, home economics and 4-H to a broader set known as the 11 national emphasis areas. These emphasis areas are: Agricultural and Food Biosecurity; Agricultural Systems; Animals and Animal Products; Biotechnology and Genomics; Economics and Commerce; Families, Youth, and Communities; Food, Nutrition and Health; Natural Resources and Environment; Pest Management; Plants and Plant Products; and, Technology and Engineering (CSREES, 2005b).

The relationship between state extension systems, land-grant institutions and USDA-CSREES falls under two main USDA-CSREES structures. The first mechanism is national program leadership. One of the main goals of the organization is to "help states identify and meet research, extension, and education priorities in areas of public concern that affect agricultural producers, small business owners, youth and families, and others (CSREES, 2005a, ¶ 6). The second mechanism is federal assistance by which the

government "provide[s] annual formula funding to land-grant universities and competitively granted funds to researchers in land-grant and other universities" (CSREES, 2005, ¶ 6). USDA-CSREES works to address problems that affect people's everyday lives through the resulting network of partnerships and collaborations. Extension works in the following areas: problems in the agricultural sector; new product development; safeguarding animals and plants; supporting human health and nutrition; youth and families; and strengthening and rebuilding rural communities (CSREES, 2005a). All of these issues fall under one of the 11 national emphasis areas. The programming and funding mechanisms define the relationships between the levels of Cooperative Extension. The three partners in funding extension are the federal, state, and local governments, while the three partners in programming are the USDA, the land-grant universities of the state, and local extension offices (Seevers et al., 1997).

Management in Extension

Researchers depict extension's management structure in a six-tiered pyramid (Buford, Bedeian, & Lindner, 1995). The first or lowest level on this pyramid consists of the non-managers or agents and specialists. The second level is the first-line management, or the county directors and project leaders, the largest group of managers. They are "responsible for managing agents, specialists, program assistants, clerical personnel, and other non-managing staff" (Buford et al., 1995, p. 7). The third level of management in extension is the middle management level, comprised of district directors and district agents, department heads, and state leaders. Middle managers' primary focus is to incorporate different groups within extension so they can collaborate (Buford et al., 1995). The last three levels of the pyramid are top management. These levels are occupied by associate director for field operations, associate director for programs, heads

of service programs, and the Director of Extension, respectively. According to Buford et al., (1995) "top management has three basic roles: interpersonal (figurehead, leader, liaison); informational (monitor, disseminator, spokesperson); and decisional (entrepreneur, disturbance handler, resource allocator, negotiator)" (p. 11). Top management defines the mission and direction of extension.

The Florida Extension System

The History of the Institute of Food and Agricultural Sciences in Florida

The Morrill Act of 1862 assigned the University of Florida land-grant status. The Morrill Act also paved the way for the establishment of the College of Agriculture in 1906 (UF/IFAS, 2004a). The University of Florida reorganized its College of Agriculture, School of Forestry, and Cooperative Extension into a single entity called the Institute of Food and Agricultural Sciences, or IFAS in 1964 (UF/IFAS, 2004a).

> Today, UF/IFAS includes extension in each of the state's 67 counties, 14 research and education centers with a total of 19 locations throughout Florida, the College of Agricultural and Life Sciences, the School of Forest Resources and Conservation, the Center for Tropical Agriculture, portions of the College of Veterinary Medicine, the Florida Sea Grant Program and the International Program for Food, Agriculture and Natural Resources. (UF/IFAS, 2004, ¶ 4)

The research mission of IFAS is to "invent, discover and develop knowledge to enhance the agriculture and the natural resources of Florida" (UF/IFAS, 2004, ¶ 12) while its extension mission is "to provide scientific knowledge and expertise to the public" (UF/IFAS, 2000, ¶ 1).

Management and Employment in the Florida Cooperative Extension Service

Florida Cooperative Extension Service (FCES) management uses the Buford et al. (1995) six tiered management pyramid. County extension agents are the non-management tier of the pyramid. These agents conduct educational programs in

agriculture, family and consumer science, 4-H/youth development, natural resources, urban horticulture, community development, Sea Grant, and energy. Extension agents fall into four ranks: Agent I, Agent II, Agent III, and Agent IV. These ranks are comparable to university positions of instructor, assistant professor, associate professor, and professor, respectively. County extension agents are "responsible for developing and implementing an educational program in a designated subject matter to help people acquire knowledge and develop problem-solving skills to meet their needs" (UF/IFAS, 2005, ¶ 9). The Personnel Department for IFAS published a county extension agent job description that includes providing leadership, implementation, delivery, and evaluation for extension education programs. The job description states that extension agents must be accountable for their work and make the information about their work and programs available to all stakeholders and relevant parties.

Extension agents must design their educational programs to reflect the county's diversity, population and educational needs. Seevers et al. (1997) describe the program development process as a three-part model. The first part of the model is planning. This part includes "the identification of goals, determining needs, setting program priorities, identification of target audiences, and development of program objectives" (Seevers et al., 1997, p. 92). The second part is design and implementation, which focuses on program content, methods of delivery, and delivering the program. Finally, the third component is evaluation, which focuses on the measurement of "program success and impact" (Seevers et al., 1997, p. 92).

Extension agents also make use of advisory committees to incorporate the involvement of community members into the educational program development process.

The Program Development and Evaluation Center (PDEC) of IFAS defines advisory committees as "a group of citizens organized by Extension for the purpose of providing advice on and assistance with the planning, legitimization, implementation, evaluation and accountability of Extension programs, and the maintenance of the general health and welfare of the Extension organization" (PDEC, 2005a, ¶ 2).

Extension agents use input from clientele or stakeholders in addition to that od the advisory committees. Seevers et al. (1997) defines stakeholders as "people who have a vested interest in a program" (p. 251). These people can include everyone from actual participants in the program, to their families, other individuals in extension, community members, and producers or employees in the area of the educational program. Extension agents usually use needs assessments to identify the needs of the stakeholders. Extension agents can address questions such as what aspects of the community can be improved, who is being affected by current problems or issues, and what resources are needed to develop a particular program (Seevers et al. 1997). In this way, extension agents are not only responsible for the development of educational programs, but also must take the needs, thoughts, and interests of the community into account through advisory committee consultations and needs assessments.

The first-line managers are the county extension directors (CEDs). They are responsible for delivering educational programs in their area of specialization, providing leadership in their county's extension system, and for maintaining responsibility for all administrative and program matters in their county (UF/IFAS, 2005).

Community Food Security

The Evolution of Community Food Security

Community food security partially evolved out of the concept of food security. Researchers first defined food security in the early 1970s as "the ability to meet aggregate food needs in a consistent way" (Anderson & Cook, 1999, p. 142). This concept was a response to several key factors associated with growing world hunger in the 1960s and 1970s. The first factor was the high population growth rates in many countries. The global population increased by more than 2 billion between 1970 and 1995, increasing the world's population to 5.7 billion. The population grew by about 80 million people per year on average during this period, equivalent to the population of Germany in 1995 (Fritschel, Pandya-Lorch, & Rose, 1996, ¶ 3). The World Food Conference in 1974 responded to this increase in population by focusing on food production as a way to avert increasing hunger and famine in the world (Anderson & Cook, 1999). They brought the 'right to food' concept to the forefront for both international and domestic development when they proclaimed "every man, woman and child has the inalienable right to be free from hunger and malnutrition in order to develop their physical and mental faculties" (Foreign Agricultural Service, 1995, ¶ 2).

Changes in food production technology and goals were the second major factor that drove the food security movement. In 1950, scientists began a concerted effort to develop varieties of necessary crops such as corn and rice to combat world hunger problems in developing countries in Asia and Latin America (Evenson & Gollin, 2003). The media and others were referring to these efforts' success as the "Green Revolution" by 1970. The Green Revolution included hybridized forms of wheat and other grains

that were resistant to disease and drought in order to increase food access and increase per capita income for farmers in these areas (Environmental Literacy Council, 2005).

The increase in food production and a focus on vertical integration contributed to a "food entitlement" or "food first" framework for food security. In other words, "assuring short-term nutritional intake [was] the main objective" (Anderson & Cook, 1999, p. 142) of the food security movement in 1980. The need for greater yields to meet demands and the vertical integration of the food industry led to a 'more is the solution' mindset. The development of the concept of food security in the 1970s and 1980s revolved around individuals' rights to food. The measurement of food security in geographic regions or countries as a "universal dimension of household and personal well-being" (Holben, 2002, p. 157) reinforced the 'food first' concept. The World Bank, an organization that provides financial and other types of assistance to developing countries, became involved in the food security movement in 1984. They identified food security as a vital issue for developing countries and for lower socioeconomic strata in the United States. They developed the most commonly accepted definition of food security today: "access by all people at all times to enough food for an active healthy life" (Anderson & Cook, 1999, p. 142).

A reflection on the 1974 World Food Conference revealed that in the twenty years that followed, food security efforts were successful in achieving their goals of decreasing incidences of malnourishment and starvation around the world (Fritschel et al., 1996; Evenson & Gollin, 2003). The United States government illustrated the national influence of the food security movement by strengthening assistance programs such as Women Infants Children (WIC) and Food Stamps. The government designed these

programs to assist unemployed, ill, or otherwise unable people in the United States in obtaining food. However, the swift expansion of the world population coupled with the time needed to match agricultural production with the growing need made for slow progress in alleviating hunger in developing countries and the United States (Fritschel et al., 1996; Evenson & Gollin, 2003). The food security movement suggested substantial changes during these two decades. The World Bank and the World Food Conference both envisioned a greater food supply to meet the needs of the population. However, toward the end of the 1980s, they discovered that an adequate food supply did not ensure adequate food access for hungry people (Anderson & Cook, 1999).

Although people agreed that world hunger was an issue, many groups had different positions about how to address hunger. The food assistance programs and the increase in food production in the world helped the targeted populations of the food security movement. However, some food security methods there were unduly affecting other groups of people. Vertical integration was putting smaller farms out of business. There was also and increase in the use of fossil fuels for transportation and production purposes. The demand for yields resulted in increased land use, pesticide use, and other environmentally degrading effects (Gussow, 2001; Evenson & Gollin, 2003).

Holben (2002) revisited the concept of food security adding that access to food "includes the ready availability of nutritionally adequate safe foods and the assured ability to acquire them in socially acceptable ways" (p. 156). Proponents for CFS argued that this concept was not broad enough to address the social and environmental issues that were arising due to food security methods. Hamm and Bellows (2003) proposed a definition of CFS that would become one of the most widely accepted. This definition is

"a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (Hamm & Bellows, 2003, p. 37). Holben's (2002) definition of food security incorporated the concepts of food access, nutritionally adequate foods, and social acceptability. Hamm and Bellows (2003) expanded this definition into the umbrella concept of CFS by modifying the concept of social acceptability, and by adding the concepts of sustainable food systems, local food systems (community self-reliance), and social justice. These additional components address the environmental and social issues explained by Gussow (2001) and Evenson and Gollin (2003). "Food security analysis evaluates the existence of resources, both community and personal . . . CFS analysis, however, can also extend beyond such basic questions as adequacy of personal resources into an examination of the food system itself" (Gottlieb & Fisher, 1996b, p. 24).

Defining Community Food Security

The evolution of CFS definitions consisted of inclusions and exclusions of concepts, and metamorphoses of meanings. The process generated many other definitions. While the definition proposed by Hamm and Bellows (2003) is the most widely accepted, there are many others that researchers commonly refer to in current literature. Table 2-1 illustrates the major definitions and their originators.

Table 2-1. Matrix of prevalent community food security definitions as of 2006.

Author	Definition
Gottlieb and Fisher (1996a)	"food system-based issues of hunger, access, quality and availability as well as related questions of how food is grown, processed, or 'manufactured,' and distributed" (p. 193)

Table 2-1. Continued.

Author	Definition
Hamm and Bellows (2003)	"a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (p. 37)
USDA (2004)	"a prevention-oriented concept that supports the development and enhancement of sustainable, community-based strategies to improve access of low-income households to healthful nutritious food supplies, to increase the self-reliance of communities in providing for their own food needs, and to promote comprehensive responses to local food, farm, and nutrition issues" (¶ 1)
Cohen (2002)	"concerns the underlying social, economic, and institutional factors that affect the quantity and quality of available food and its affordability or price relative to the sufficiency of financial resources available to acquire it" (p. 3)
Pelletier, Kraak, McCullum, Uusitalo, and Rich (1999)	"the ability of a community to ensure that all its member have adequate access to healthful, acceptable food through environmentally sustainable, economically viable, and socially desirable production, processing, and distribution methods" (p. 401)

Many authors precede their definitions by stating that there is no one accepted definition. The definition of CFS is in need of focus and delineation. Anderson and Cook (1999) state "CFS as a concept suffers from loose definitions and absence of a theoretical structure" (p. 142). They go on to say that CFS has the potential to "improve the understanding of the barriers to food security at several levels of analysis, and help policy makers and practitioners improve food security in a given area" (p. 142). There are seven concepts that are common to most current definitions; these are all represented in the Hamm and Bellows (2003) definition. The seven concepts are: food access, food safety, nutrition, sustainable agriculture (food production), local food systems (community food systems), culturally acceptable food and social justice. These are the

core seven concepts that occur most often, although some definitions of CFS do not include some concepts or incorporate concepts not in this list.

As mentioned previously, Holben (2002) defines food access as "the ready availability of nutritionally adequate safe foods and the assured ability to acquire them in socially acceptable ways" (p. 156). Kantor (2001) supports this definition when she states that food access includes the ability of a household to acquire enough food to support life, health, and activity. One can determine the adequacy of food access through such factors as the ability or inability to get to a supermarket or food retail store due to the availability of transportation (Winne, n.d.).

The definition of food safety includes both the safety of foods being sold and the knowledge of community members on how to safely prepare foods so as to avoid food borne illness (Thomson et al., 2004).

Nutrition issues are "rates of diet-related health problems, including obesity and diabetes as well as infant mortality, low-birth weight babies, and iron-deficient anemia" (Winne, n.d., p. 1). The concept of nutrition also includes a balanced diet and access to foods that are healthy and wholesome.

Sustainable agriculture refers to the provision of a more profitable income for farmers and producers while promoting responsible environmental management and care (CSREES, 2005b). Feenstra (2002) adds to this by saying that sustainable agriculture "can be characterized as more environmentally sound, more economically viable for a larger percentage of community members" (p. 100). The USDA's official definition of sustainable agriculture is "an integrated system of plant and animal production practices having site-specific application" (USDA, 2004).

Local or community food systems relate to the concept of sustainable agriculture. These systems are collaborative efforts "to build more locally based, self-reliant food economies – one[s] in which sustainable food production, processing, distribution, and consumption are integrated to enhance the economic, environmental, and social health of a particular place" (University of California, 2002). Community self-reliance is integral to the concept of local food systems because community residents are engaged in all phases of planning, evaluation and implementation.

The concept of culturally acceptable foods refers to both the type of food consumed and the manner in which the food was obtained. For example, in some cultures, it is unacceptable to kill and eat animals such as cats and dogs. A major indicator for food insecurity would be eating culturally unacceptable animals.

The concept of social justice has many definitions. Reisch (2002) illustrated the elusive nature of this concept. He states social justice is often viewed as an alternative to dominant or hierarchical forces, focusing on individual rights and egalitarianism. In the context of CFS, social justice is "the injustice of hunger and food insecurity" as well as "the adequacy of wages and working conditions for all those who earn their livelihoods from the food system" (Winne, n.d., p. 2).

Defining Community

One must examine the concept of community when defining the concepts of CFS. Almost all researchers reference the fact that there is no common definition for community. It is a concept that holds many points of contention and disagreement for researchers, sociologists, and community developers. Bell and Newby (1972) said, "In considering the concept of community, the sociologist shares an occupational hazard with the architect and the planner: the more he attempts to define it in his own terms, the more

elusively does the essence of it seem to escape him" (p. 21). The researchers go on to explain that the basic confusion in defining the concept of community lies in a differentiation between empirical description and normative prescription. In other words, "what the concept involves has not proved to be too difficult to elaborate; attempts to describe what it is, however, have proved impossible without making value judgments" (Bell & Newby, 1972, p. 21). Other researchers have also documented the issues and barriers in finding a common or agreed-upon definition for community (Wood & Judikis, 2002; Wilkinson, 1991; Rubin & Rubin, 2001). Obst, Smith, and Zinkiewicz (2002) documented a 1995 literature review that found at least 94 definitions for the term "community". This section will not attempt to provide an ultimate definition, but will provide a brief overview of the most prominent, current ideas regarding community. This section will provide the definitions referenced in terms of local food systems and CFS and provide a working definition for this study. The section will cover the concepts in four sections: Communitarianism, Psychological Sense of Community, Geographic Community, and Community and CFS.

Communitarianism

Bell (1993) describes the communitarian approach by using the definition in The Responsive Communitarian Platform: "A communitarian perspective recognizes both individual human dignity and the social dimension of human existence" (p. 1). Etzioni (1997) suggests that communitarians seek an agreement on the constitution of a good society. The communitarian paradigm focuses less on what constitutes a community than what constitutes a good community. He writes:

> The communitarian paradigm … applies the notion of the golden rule at the societal level to characterize the good society as one that nourishes both social virtues and

> individual rights. I argue that a good society requires a carefully maintained equilibrium of order and autonomy, rather than the 'maximization' of either. (p. 4)

Communitarianism focuses on both the components and the whole that make up a community. Bell (1993) asserts that communitarianism can be defined by looking at the beliefs about the self, the methodological approach to political theory, and the stated value of the community. Bell (1993) agrees with Etzioni and suggests that true communitarianism sees individuals as social beings. He also suggests that communitarians, therefore, can only approach political theory with an explanation of shared interpretation regarding community. Finally, he suggests that the value of the community is ultimately important because it is the community that defines the individual, not the other way around (Bell, 1993).

Etzioni (1997) also identifies several components that make up the communitarian paradigm and contrasts those components with the ones that make up libertarianism, a perspective on the other side of the spectrum. In contrast to the libertarian perspective, Etzioni (1997) argues that communitarians see people as inherent parts of a social context, and not as free agents. It is impossible to view people as individuals apart from society. This paradigm also addresses the fact that "community is a set of attributes, not a concrete place" (Etzioni, 1997, p. 6). Etzioni argues that communities have common needs, although they may have different attributes. The attributes will determine the differences in the responses to those needs, but the needs remain universal among communities.

The call for social order is another point that differentiates communitarianism from libertarianism. Etzioni states, "Communitarians see a need for a social order that contains a set of shared values to which individuals are taught that they are obligated …

their starting point is a shared set of definitions of what is right versus what is wrong" (Etzioni, 1997, p. 12). He argues that membership in a community that has these shared values should be voluntary rather than forced, therefore reinforcing the meaningfulness of the individual's commitment to the community and to all of the members of that community. This shared set of values furthers the autonomous nature of communitarianism, rather than a commitment to furthering morality or values. Communitarians "limit the virtues the society favors to a core set of values while legitimating differences on other normative matters" (Etzioni 1997, p. 17). However, the autonomy in this model is somewhat limited. The autonomy articulated here is only within the limits of the core shared values and works to balance the voices of those in power versus those being ruled (Etzioni, 1997).

Communitarianism is admittedly on a definitive side of the spectrum and it has its critics. Bell (1993) identifies the 'Left Neo-Kantian Liberal' framework as a theory that opposes communitarianism. Specifically, where communitarians see individuals as parts of the communities and societies they make up, liberals see people as struggling to be individuals in spite of societal barriers. He illustrates this point when he wrote that liberalism:

> offered a defense of liberal freedoms so basic that they could not be overridden by the good of society as a whole. The crucial move was to found liberalism on the capacity (and responsibility) we have to exercise our Kantian moral powers of shaping, pursuing, and revising (if need be) our own life plans, and to respect the exercise of these same powers of self-determination on the part of other persons. (Bell, 1993, p. 3)

Etzioni (1996) said that there is room for moderation in the communitarian paradigm despite its extreme perspective. He suggested that there was a part of a person that fell into the social category and a part of a person that fell into the individual category, as

described by Bell (1993). The person as an individual was the spring of creativity and transformation within community. Individuality fulfilled the person on a fundamental level. The person as a part of a community was the foundation for work toward the needs of the community and for support for the social virtues within that community (Etzioni 1996). Etzioni (2000) put forth his own definition for community with these perspectives in mind. He wrote:

> Community is a combination of two elements: A) A web of affect-laden relationships among a group of individuals, relationships that often crisscross and reinforce one another (rather than one-on-one or chainlike individual relationships). B) A measure of commitment to a set of shared values, norms, and meanings, and a shared history and identity – in short, to a particular culture. (p. 188)

Psychological Sense of Community

In the midst of the debate over what constitutes a community and what qualities constitute a good community, there was a noted lack of measurability of these characteristics in the scientific community. Sarason (1974) developed the theory of a psychological sense of community and suggested that community was self-defined through this sense. Sarason's research provided the basis for future theoretical development by McMillan and Chavis (1986). They adapted Sarason's concept into the definition, "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together." They argue that community is comprised of four basic elements: membership, influence, integration and fulfillment of needs, and shared emotional connection. Most current researchers argue that this theory "provides the best foundation upon which to build our understanding of communities" (Obst et al., 2002, p. 121). Obst and White (2005) state that the psychological sense of community is what defines a quality or well-functioning community. They found that psychological sense of

community is strongly related to group identification and in-group ties (Obst and White, 2005).

Researchers have conducted many studies to examine psychological sense of community in connection to geographic communities or communities of place. Obst et al. (2002) examined psychological sense of community across rural, urban, and suburban communities. Their findings supported the four dimensions of psychological sense of community as described by McMillan and Chavis (1986), and found a fifth dimension through factor analysis. Obst et al. (2002) found that "conscious identification" was also a major indicator of psychological sense of community. This factor appeared to be more important than geographic location.

Some researchers argue that the psychological sense of community does not allow for the complexities that are inherent in communities, particularly those that are in an urban context. Colombo, Mosso, and De Piccoli (2001) write that community has historically been defined as homogeneous and harmonized. The researchers feel that descriptions of community such as the one put forth by Etzioni (2000) do not paint a realistic picture. The psychological sense of community and its instrument, the Sense of Community Index (SCI) do not "take into account the dynamic and conflicting components that may be present at the level of the local community, in particular, with urban contexts" (Colombo et al., 2001, p. 462).

Geographic Community

Researchers have also examined community as a geographic location. Hirst (1980) issued a proposal for a firmer theoretical framework for community as a geographic place in order to further community development efforts. He utilized the term 'local social system' defined as "a set of interrelated social institutions which exist within a

geographically defined locality" (Hirst, 1980, p. 54) for his proposal. This definition was tentative, and the author suggested that more research be done in looking at the role of location and community power, examining communities' geographic circumstances and their effects on their community issues. Researchers interested in community in terms of community development have responded to this proposal in recent years.

Organizers and researchers currently define communities geographically for the purposes of sustainable community development. Rubin and Rubin (2001) write that organizers can use the term 'community' to describe a geographical place in order to employ strategies that allow people within those areas to work together to create a better space. They describe community as a geographic place as "a neighborhood, perhaps a large housing complex, or a park in which the homeless congregate. People living in this place interact with each other, at least occasionally" (Rubin & Rubin, 2001, p. 97). The definition of community proposed by communitarians and the geographic definition utilized by community organizers clearly have little in common. Martin (2003) states, "Proximity fosters common experiences of problems and thus common interests, but location does not, in itself, make a community. Yet many scholars have argued that place fosters a common identity, based on common experiences, interests, and values" (p. 730).

Scholars agree that the concept of "neighborhood" denotes places, whereas "community" does not (Flora, 1998; Galster, 2001; Rubin and Rubin, 2001; Martin, 2003). Galster (2001) defines the concept of neighborhood as "the bundle of spatially based attributes associated with clusters of residences, sometimes in conjunction with other land uses" (p. 2112). These spatially based attributes are characteristics such as: architectural quality, quality and type of roads, utilities, and sidewalks, demographics of

the population, environmental attributes, and local social network traits. One can measure or observe these characteristics within a designated location, unlike those of less place-based communities (Galster, 2001). These spatially-based attributes are significant not only to those wanting to delineate neighborhoods, but also to community developers. Martin (2003) found that "local communities constitute their territorial sphere as a legitimate and meaningful site for activism" (p. 747). Curry and McGuire (2002) base their argument on the assumption that community and geographic space are inherently connected. They state that social groups of people look to develop communities as well as provide stewardship of the land on which the community lives.

Community and Community Food Security

The concept of community is fundamental to CFS. However, there is no accepted definition of this concept in CFS literature. "Local CFS projects distinguish themselves by their attention to community infrastructure and their local food system approach to achieving food security" (Hamm and Bellows, 2003, p. 38). Gillespie and Gillespie (2000) discuss community as it relates to the food system in four different categories. The first is the classical community. They describe this as a small grouping of people who are dependent on one another for their needs. The members of this community could readily identify other members and would share a common culture. They distinguish the classical community from the community of place, or "geographic areas where people live … inhabitants may exhibit very few or none of the other properties embodied in the classical sense of community" (Gillespie & Gillespie, 2001, ¶ 6). They also identify communities of interest, where social groups congregate based on a shared concern or issue. Finally, they discuss the modern community where people can live independently of other community members due to access to imported or outside

resources that meet individual needs. In this community, people may not be able to recognize all members of the community, and they are not aware of the sources or producers of the products they consume.

While Gillespie and Gillespie (2000) discuss this last type of community as one that warrants concern when talking about the food system, they do not identify one description or definition of community in CFS terms. They describe their conceptualization of a 'community food system.' They identify this concept as "part of the larger food system that is geographically located in a community" (Gillespie & Gillespie, 2001, ¶ 8). They depict the community food system as being a self-reliant system that is controlled by local community members. The products of this type of food system should be accessible by all residents. The products should also be healthy, safe to consume, and their production should contribute to the sustainability of the environment and of the community in which the food system is located. The system should be able to function in the face of disturbances, environmental or weather challenges, and in times of economic insecurity. The system should also promote the food security of all community members.

Gillespie and Gillespie (2001) said that the attributes that make a community food system functional or effective are subjective in the case of each community. Hamm and Bellows (2003) concur with this when they write, "The term 'community' in CFS promotes highly differentiated understandings that vary according to the geographic environs (size, location, environmental quality, etc), the local political economy and the demographic identity of those defining food security" (p. 38). It is not just the physical manifestation of community and the food system that is of importance, but also the action

and efforts of the community to address and meet community members' needs (Bellows & Hamm, 2003).

Community Food Security and the Cooperative Extension Service

As mentioned in Chapter One, extension has long had a distinct relationship with the food system in the United States. "The long desired outcome for extension educators and their communities is to build community consensus and to develop a common vision for a sustainable food system" (Thomson, et al., 2004, p. 201). Extension educators have a patent role in working with their communities in building and shaping an effective food system through educational programming and stakeholder interaction. The concept of CFS deals with many aspects of the food system and with community involvement in the food system. Florida Cooperative Extension Service works with both the 11 National Focus Areas of USDA-CSREES and with the statewide goals for Florida for 2004-2007. Each of these statewide goals has an underlying focus area team. These are presented as the overarching statewide goal and the underlying focus area teams in Table 2-2.

Table 2-2. Florida statewide goals and underlying focus area teams, 2005.

Florida Statewide Goals	Associated Focus Area Teams
Goal 1: To enhance and maintain agricultural and food systems	FT* 1a: Agricultural Profitability and the Sustainable Use of Environmental Resources FT 1b: Awareness of Agriculture's Importance to an Economy That Ranges From Local to Global FT 1c: Processing, Distribution, Safety and Security of Food Systems FT 1d: Plant, Animal, and Human Protection FT 1e: Safety for Agricultural Operations and Equipment
Goal 2: To maintain and enhance Florida's environment	FT 2a: Water Resources FT 2b: Conservation and Sustainable Use of Freshwater and Terrestrial Natural Resources and Ecosystems FT 2c: Environmental Education FT 2d: Conservation and Sustainable Use of Coastal and Marine Natural Resources and Ecosystems

*FT=focus area team (PDEC, 2005b)

Table 2-2. Continued.

Florida Statewide Goals	Associated Focus Area Teams
Goal 3: To develop responsible and productive youth through 4-H and other youth programs	FT 3a: Life Skills Developed In Youth Through Subject Matter Experiences FT 3b: Organizational Strategies and Learning Environments to Support Youth Programs FT 3c: Volunteer Development and Systems to Support Youth
Goal 4: To create and maintain Florida friendly landscapes: The smart way to grow	FT 4a: Commercial Horticulture/Urban Forestry Services FT 4b: Residential Landscapes FT 4c: Florida Yards and Neighborhoods (FYN)
Goal 5: To assist individuals and families to achieve economic well-being and life quality	FT* 5a: Personal and Family Well-Being FT 5b: Financial Management and Economic Well-being FT 5c: Nutrition Food Safety And Health FT 5d: Housing and Environment FT 5e: Nonprofit Organizations, Leadership and Volunteer Development
Goal 6: Healthy Communities	FT 6a: Addressing the Urban/Rural Interface FT 6b: Broad-Based Citizen Participation and Active Communities FT 6c: Economic Diversity FT 6d: Community Preparedness
Goal 7: To promote professional development activities designed to enhance organizational efficiency and effectiveness	FT 7a: Program Development, Implementation and Evaluation FT 7b: Faculty Orientation and Training FT 7c: Effective Communication and Technology Use FT 7d: Personal and Organizational Health FT 7e: Administration and Leadership

*FT=focus area team (PDEC, 2005b)

There are areas of association between the seven main concepts of CFS and the established foci of Cooperative Extension. Many of these focus areas, both on the national and state level, correspond with the seven concepts of CFS. Table 2-3 illustrates the relationships between these concepts. The first column contains the CFS concept and the second column contains the national and state focus areas that address that concept.

Table 2-3. Corresponding community food security concepts and extension focus areas, Florida, 2006

CFS Key Concept	USDA-CSREES National Focus Area and Relevant Focus Area Concepts	Florida Statewide Goals and Focus Area Teams
Food Access	*Food Nutrition and Health* Hunger and food security	Goal 5: To Assist Individuals and Families Achieve Economic Well-Being and Life Quality Goal 1: To Enhance and Maintain Agricultural and Food Systems FT* 1b: Awareness of agriculture's importance to an economy that ranges from local to global
Food Safety	*Food Nutrition and Health* Food safety	Goal 1: To enhance and Maintain Agricultural and Food Systems FT 1c: Processing, distribution, safety and security of food systems
Nutrition	*Food Nutrition and Health* Nutrition Obesity/healthy weight	Goal 5: To Assist Individuals and Families Achieve Economic Well-Being and Life Quality FT 5b: Nutrition, food safety, and health
Sustainable Agriculture (food production)	*Agricultural Systems* Organic agriculture Small farms Sustainable agriculture Natural Resources and Environment Environmental and resource economics Sustainable development	Goal 1: To Enhance and Maintain Agricultural and Food Systems FT 1b: Awareness of agriculture's importance to an economy that ranges from local to global Goal 2: To Maintain and Enhance Florida's Environment FT 2a: Water resources FT 2c: Environmental Education
Local Food Systems (community food systems)	*Economics and Commerce* Public policy Small and home based businesses *Family, Youth & Communities* Rural and community development	Goal 5: To Assist Individuals and Families Achieve Economic Well-Being and Life Quality Goal 6: Healthy Communities

*FT=focus area team, national focus areas are in italics

Table 2-3. Continued.

CFS Key Concept	USDA-CSREES National Focus Area and Relevant Focus Area Concepts	Florida Statewide Goals and Focus Area Teams
Culturally Acceptable Food	*Food Nutrition and Health* Hunger and food security	Goal 5: To Assist Individuals and Families Achieve Economic Well-Being and Life Quality FT 5c: Nutrition, food safety, and health Goal 1: To Enhance and Maintain Agricultural and Food Systems FT 1c: Processing, distribution, safety and security of food systems
Social Justice	None	None

*FT=focus area team, national focus areas are in italics

Extension Programs and Food-Access Issues

The concepts of CFS are in both the national focus areas and Florida's statewide goals and focus area teams, with the exception of social justice. These areas are also evident in extension programs and studies throughout the United States. For example, Greer and Poling (2001) discuss a program called the Expanded Food and Nutrition Education Program (EFNEP) and its impact on local food security. The USDA funds the EFNEP program and state extension services manage it (Greer & Poling, 2001). The program helps low-income families deal with nutrition and food insecurity issues. The mission of this program is to "provide communities with an effective, research supported, nutrition education program that enables limited resource families and youth to acquire nutrition behaviors contributing to quality health and wellness" (EFNEP/IFAS, 2004, ¶ 3).

Greer and Poling (2001) designed a study to "examine the relationship between food insecurity and participation in nutrition education classes and the relationship

between food insecurity and overall health status" (p. 3) in Tennessee. The purpose of the study was to establish the impact of an extension program on hunger and nutrition issues, two of the concepts inherent to CFS. The sample in this study consisted of an intervention group that was enrolled in the EFNEP program and had taken two or more lessons, and a non-intervention group in which subjects were eligible for EFNEP lessons, but had taken one or no lessons. Each respondent filled out the Bickel's (2000)18-item household food security questionnaire. This questionnaire is also known as the Food Security Core Survey Module (Holben, 2002). The study's results suggested that participation in the extension-based EFNEP program showed an increase in household food security among the study's subjects (Greer & Poling, 2002). The results also indicated that people with less food security are more likely to have issues associated with poor health than those with more food security (Greer & Poling, 2002). Subjects who had completed the program were more likely to have food at the end of the month and were more likely to have higher intake levels of vitamins and minerals (Greer & Poling, 2002). The authors conclude the paper by suggesting that there is a "need for multi-session nutrition education for low-income households, focusing on basic nutrition, food shopping, and cooking skills. The impacts of such programs can be increased food security for participants, better health, and more efficient use of food resources" (Greer & Poling, 2002, p. 9).

The Family Living Program, offered through University of Wisconsin Cooperative Extension, is another example of extension's direct involvement in hunger and food-access issues. Row (2005) started a series of papers called *Hunger Close to Home,* published through the Extension service in Wisconsin. The purpose of this series was to

educate community members and state residents of hunger, food insecurity, and risk factors in their area. Row (2005) points out that "relative to other states, Wisconsin households have become more food insecure and hungry. People are also seeking more food assistance" (p. 2). Food Stamp, or Food Share, participation in Wisconsin has increased more than anywhere else in the United States (Row, 2005). University of Wisconsin Cooperative Extension responded to these food access and hunger issues by offering publications such as the *Hunger Close to Home* series and by offering the Wisconsin Nutrition Education Program (WNEP) to families and individuals (Row, 2002). Specifically, "UW-Extension conducts research to better understand the extent of food insecurity and hunger in Wisconsin, and the characteristics of food insecure households" (p. 3). University of Wisconsin Extension Service designed and evaluated the programs that address the hunger and food insecurity issues in the state in order to meet the needs of the community.

These examples illustrate extension programs that focus on food access and nutrition and the impact they can have on community participants and their families. These programs incorporate the CFS concepts of food access and nutrition. The programs also incorporate the national focus area, Food, Nutrition, and Health. The programs fall under Florida's goal area of assisting individuals and families in achieving economic well-being and life quality. The focus area team under that goal area is Nutrition, Food Safety, and Health. Currently, Florida has 12 counties participating in EFNEP (EFNEP/IFAS, 2004).

Extension Program and Food-Safety Issues

Extension programs also address food-safety issues and food safety education. Gentry-Van Laanen and Nies (1995) conducted an evaluation of extension food safety

programs in Texas. Researchers requested participant lists of Texans who had attended a food safety program in the previous two years to identify their population. Gentry-Van Laanen and Nies (1995) identified eligible programs as "those utilizing a group meeting or result demonstration format to teach safe food handling or food preservation practices to adults" (¶ 8). The researchers developed 16-question interview forms based on content material such as lesson plans, activity sheets or fact sheets (Gentry-Van Laanen & Nies, 1995). The interviews were in a pre-test / post-test format, wherein program participants were given the same questions before and after the program. They conducted a follow-up interview via telephone up to 10 weeks after the program.

Gentry-Van Laanen and Nies (1995) found that specific food handling and food safety behaviors showed statistically significant shifts toward desired behaviors. "In addition, almost one half of the participants identified publications or programs provided by the Extension Service as their main source of food safety information" (Gentry-Van Laanen & Nies, 1995, ¶ 14). The researchers found that the extension service in Texas met a definitive food-related need in the community that was not addressed by other agencies. The results suggested that the programs attempting to address the needs were successful in their efforts. The study addressed the current local concerns about foodborne illness and its costs. The researchers suggested that educational efforts on the part of the extension service should be continued, and possibly directed toward certain members of the community (Gentry-Van Laanen & Nies, 1995).

An extension website offered food safety knowledge for Penn State Cooperative Extension agents. The site was a response to an extension agent questionnaire that indicated extension agents wanted more support from specialists in food science in the

areas of home food preservation and food safety (LaBorde, 2003). Researchers conducted a study to determine the extent to which extension agents used the site for food safety information, the effect the site had on extension agents' level of knowledge the extension agents had regarding food safety, and changes in behavior or attitude toward the Internet as a result of using the site (LaBorde, 2003). The researchers sent an electronic questionnaire to 72 Cooperative Extension agents who subscribed to a mailing list that focused on food safety information (LaBorde, 2003). The results suggested that "the web site has been successful because it has responded to a specific request from Cooperative Extension agents for rapid and easy access to food safety and home food preservation information" (LaBorde, 2003, ¶ 21). In addition, the web site increased extension agent awareness of research, activities, and education in the Department of Food Science at Penn State University (LaBorde, 2003). The web site served as a way to provide extension agents with information pertinent to addressing community members' food-safety issues, concerns, and questions.

Both the Texas food safety program evaluation and the web site dedicated to food safety through Penn State illustrate extension's furthered involvement with food safety, an essential concept to CFS. These examples showed extension agents' need for organizational support. This organizational support could be accessible information, the availability of specialist support, or accessible evaluative data for extension agents engaging in educational programs that focus on food-safety issues. These programs reflect a concentration on the national focus area of Food Nutrition and Health. Programs such as these in Florida show a focus on the goal area of enhancing and maintaining

agricultural and food systems. The focus area team within that goal area would be Processing, Distribution, Safety and Security of Food Systems.

Extension Programs and Nutrition Issues

Many extension educational programs focus on nutrition. Texas Agricultural Extension Service offers an educational program that addresses nutrition choices of those who receive food stamps. The program is called The Food Stamp Nutrition Education Program or FSNEP, but for marketing purposes in Texas the program is delivered as the Better Living for Texans program (BLT) (Anding, Fletcher, Van Laanen, & Supak, 2001). The Texas Agricultural Extension Service designed the BLT program to address a community food-related issue identified by the USDA in 1999. A nation-wide survey found that, while the national average of food-insecure households was 9.7% in 1999, Texas had a higher-than-average total of 12.9% of households that were food insecure (Anding et al., 2001). A major objective of the BLT program was to provide "education and guidance in the area of food resource management to prevent food insecurity" (Anding et al., 2001, ¶ 18).

Anding et al. (2001) performed an evaluation in order to determine the effectiveness of the program. They conducted a telephone-based survey targeted toward participants in the BLT program. The evaluation results indicated that the program was successful in its efforts to influence food selection, food safety knowledge, and food resource management among participants. The researchers predicted that changes in these behaviors would have long term health effects. The researchers based this projection on the assumption that "increased consumption of fruits and vegetables and decreased consumption of dietary fat are thought to promote good health and prevent disease" (Anding et al., 2001, ¶ 15). Overall, the study found the program to successfully

address the established need for education in nutrition, food management, and food safety and reduce community dependency on local food banks and emergency food reserves (Anding et al., 2001). This program, like others, focused on one core concept of CFS, but incorporated several others in its educational curricula.

Extension Programs and Local Food Systems

Thompson et al. (2003) made the argument that extension should promote a focus on local food systems. They conducted a survey of all Pennsylvania Extension agents. The goal of the study was to "determine perspectives of extension educators relative to local food system issues and programming in Pennsylvania" (Thomson et al., 2003, p. 201). The researchers measured four main variable categories to achieve this goal. The first variable was respondents' attitudes regarding local food system issues. The researchers measured these attitudes with a Likert scale. The second category of variables consisted of extension agents' perspectives on support or barriers to local food system programming. The third category of variables measured extension agents' responses to the involvement of local organizations in local food systems programming. Finally, the fourth category consisted of respondents' demographic characteristics. The researchers collected this data from extension agents using a web-based instrument.

The researchers found that extension agents felt that the most support for local food systems programming came from their CEDs, while the least came from local residents. They also found that extension agents felt that the top three barriers to participating in local food systems programming were: lack of organizational resources; the programming did not fit in with their programmatic responsibilities; or, that they did not have enough knowledge. The researchers concluded that while extension agents found most local food system issues important, they did not feel that this alone was enough to

determine programming for a community. In other words, the researchers suggested that the community must demonstrate a need and the extension agents must feel the topic is important in order to achieve effective programming for a community. Finally, the researchers suggested that interdepartmental collaboration and partnerships with outside organizations can strengthen community support for local food system programming. In this way, the researchers suggested that Pennsylvania Extension educators focus on an important facet of CFS: local or community food systems.

Thomson, Abel and Maretski (2001) state that many of the community issues on which extension bases its programs stem from the capacity of the community's local food system. Sharp, Imerman, and Peters (2002) write that community based agriculture programs such as Community Supported Agriculture (CSA) can help extension "bring people together through food production and contribute to the emergence of stronger communities" (¶ 31).

All of the components of CFS are interrelated in different ways, as implied in the Hamm and Bellows (2003) CFS definition. "Hunger. Economic development. Job creation. Farmland and open space preservation. Proper nutrition of children and adults" (Thomson et al., 2001, ¶ 1). These are all issues that are related to local food systems. Thomson, Abel, and Maretski (2001) wrote about a program called Edible Connections and describe how it relates to the Extension Service in Pennsylvania. The program is designed to "initiate conversation and to take action on critical food issues … to generate changes at both an individual and a community level" (Thomson et al., 2001, ¶ 5). The researchers suggest that this type of program can work to bolster extension programs in all areas that deal with food or aspects of the food system. In addition, programs such as

Edible Connections can help extension educators in establishing collaborations and partnerships with community members and community based organizations to develop action plans to address local food system issues (Thomson et al., 2001).

The authors illustrate the potential relationship between Cooperative Extension and local CFS efforts. The Community Food Security Initiative of 1999 encourages the collaborations between "the USDA and other federal agencies, nonprofit organizations, states, and municipalities" (Thomson et al., 2001, ¶ 19). They also identify the relationship between the seven action areas named in the initiative and the 11 national focus areas developed by the USDA. Specifically, the authors point out the fact that programs such as Edible Connections can bridge the relationship between Cooperative Extension and CFS efforts by helping "extension educators address food insecurity issues in a community by making it possible to identify potential collaborators and activities (Thomson et al., 2001, ¶ 21).

Extension Programs and Sustainable Agriculture

Cooperative Extension also focuses on sustainable agriculture and food production, another core concept of CFS. In North Carolina, researchers conducted a study to assess Extension professionals' perceptions of sustainable agriculture (Minarovic & Mueller, 2000). They distributed a questionnaire to professionals that were identified as having a focus in agriculture. The study found that the majority of respondents felt that North Carolina Cooperative Extension Service had a "strong commitment to sustainable agriculture" (Minarovic & Mueller, 2000, ¶ 14). In addition, the researchers found that respondents "were interested in working on collaborative projects with members from other disciplines" (Minarovic & Mueller, 2000, ¶ 25). However, Extension professionals reported that they felt that these collaborations were not supported by administration.

Fifty-seven percent agreed that there were institutional barriers to engaging in interdisciplinary or collaborative research in sustainable agriculture (Minarovic & Mueller, 2000). More than 75% of respondents also reported that they felt there was not enough organizational support for grassroots involvement in agriculture programs and research (Minarovic & Mueller, 2000). While the respondents felt interested in participating in sustainable agriculture research and programming, they reported some institutional barriers to engaging in these activities in a way that allowed for interdisciplinary collaboration or for local involvement at a meaningful level.

Extension Program and Culturally Acceptable Food

Cooperative Extension has recently been focusing more of its attention on programs that reach more diverse audiences (Hassel, 2004). Hassel (2004) suggests that extension agents must incorporate diverse audiences' previous knowledge, ways of learning, and ways of knowing while designing educational programs. Fishman, Pearson, and Reicks (1999) acknowledged these variables when designing their study intended to gather nutrition and food information from the children of migrant farm workers. They began by observing the behaviors and current knowledge of the children in order to design culturally appropriate interview questions. The researchers stated, "A richer understanding of their world and needs would increase the service community's effectiveness in providing nutrition programming" (Fishman et al., 1999, ¶ 7). The researchers thought that a better understanding of local knowledge and culture would not only benefit their study, but would also lend itself to more successful educational programming through extension. The researchers go on to recommend that extension agents use foods found in the households of migrant farm workers when teaching children about nutrition. They also state, "Nutrition educators need to understand

traditional food and health customs to provide culturally relevant nutrition education" (Fishman et al., 1999, ¶ 19).

Hoover, Cooper, Tamplin, Osmond, and Edgell (1996) also recognized the need for culturally aware extension education programs for diverse audiences. While designing their study, they wrote, "As the Cooperative Extension Service continues to meet the needs of an increasingly diverse and multicultural client group, it is important that educational materials both written and verbal be made available to those individuals in their primary language" (Hoover et al., 1996, ¶ 7). Hoover et al. (1996) emphasize the need for extension agents to make educational programs accessible, usable, and relevant to diverse audiences.

Extension Programs and Social Justice

The concept of social justice is not found in the USDA's 11 national focus areas, or Florida's statewide goals, although it is a possible area for expansion for extension agents in the United States. Kelsey (2002) writes about the role of Cooperative Extension in delivering educational programs dealing with civic engagement and democracy. Kelsey (2002) argues that Cooperative Extension must incorporate social engagement, civil associations, and democracy-building into its educational curricula in order to fulfill its mission. Checkoway (2001) writes, "Communities in a diverse democratic society require citizens who understand their own social identities, communicate with those who are different from themselves, and build bridges across a common cause" (Checkoway, 2001, p. 129). Both Checkoway (2001) and Kelsey (2002) argue that land-grant universities and Cooperative Extension have a vital role in developing a community sense of social and civic engagement.

Theoretical Framework for the Study

The Development of the Theory of Planned Behavior

The theory of planned behavior is a fusion of two other major social psychological theories. The first of these theories is the theory of reasoned action. Ajzen and Fishbein played a major role in developing this theory to understand and be able to predict human behavior (Ajzen & Fishbein, 1980). According to the theory of reasoned action, researchers can use two major factors to predict a human's intention to perform a behavior. The first factor is the individual's attitude toward a particular behavior. Ajzen and Fishbein (1980) describe this as "the person's positive or negative evaluation of the behavior" (p. 7). The subjective norm is the second factor affecting an individual's behavior. This factor refers to the weight of social influence regarding a decision to perform a behavior. In other words, if an individual perceives that a behavior is not socially acceptable or is not encouraged, the individual will be less likely to perform the behavior (Ajzen & Fishbein, 1980). Both of these factors are effective predictors of the individual's level of intention to perform the behavior. Ajzen and Fishbein (1980) write, "Our theory assumes that the relative importance of these factors depends in part on the intention under investigation. For some intentions, attitudinal considerations may be more important than normative considerations" (p. 6).

Researchers have used the theory of reasoned action to predict such behaviors as those regarding weight loss programs, smoking cessation, and family planning behaviors (Ajzen & Fishbein, 1980). Research found that the theory only explained the decision-making process in settings where the level of volitional control was high. In other cases, it did not explain the entire process (Ajzen, 1991; Ajzen, 1996).

The theory of self-efficacy is the second psychosocial theory that led to the development of the theory of planned behavior. This theory suggests that people are more likely to perform a behavior if they think they can do it successfully. Bandura (1997) stated that "self-efficacy, or a belief in one's personal capabilities, regulates human functioning in four major ways" (¶ 1). The first way is cognitive. People with a high sense of self-efficacy are more likely to set elevated goals for themselves (Bandura, 1997). The second way is motivational. An individual's level of motivation to perform the behavior is higher if they believe that the intended behavior is achievable. The third way is mood or affect. An individual's level of self-efficacy can regulate their emotional state because it influences the ways they perceive risks, manage stress and anxiety, and deal with upsetting thoughts (Bandura, 1997). The fourth way is social. People with a low level of self-efficacy can work to reduce their own social support, while people with a high level of self-efficacy tend to attract social support (Bandura, 1997). Researchers have successfully applied this theory in cases of overcoming obstacles, social modeling, social persuasion, and reducing stress levels and occurrences of depression (Bandura, 1997).

Ajzen (1991) incorporated the concepts of the theory of reasoned action with the theory of self-efficacy to develop the theory of planned behavior. The theory of planned behavior compensated for the inadequacies of the theory of reasoned action. Similarly to the theory of reasoned action, the theory of planned behavior centered on the intention of an individual to perform a behavior. The theory also incorporated the attitude toward the behavior and the subjective norms detailed in the theory of reasoned action. Ajzen (1991) incorporated the theory of self-efficacy by adding the concept of perceived

behavioral control and its affect on the individual's intention to perform the behavior. This concept fuses the self-efficacy beliefs of an individual with their perceptions of control. Perceived behavioral control is a blending of one's perceptions of the likelihood they will successfully perform a behavior with their perceptions of the amount of external, social control regarding the behavior. "According to the theory of planned behavior, perceived behavioral control, together with behavioral intention, can be used directly to predict behavioral achievement" (Ajzen, 1991, p. 184).

Ajzen (2001) differentiates perceived behavioral control from both self-efficacy and from locus of control. He describes perceived behavioral control as the degree of control an individual believes he has over a particular behavior. In contrast, self-efficacy is the degree to which an individual believes he or she can accomplish a behavior successfully. He describes perceived behavioral control also as "the extent to which they have the requisite resources and believe they can overcome whatever obstacles they may encounter" (Ajzen, 2002, p. 677). Perceived behavioral control is different than locus of control because locus of control is categorized into internal or external sources, whereas perceived behavioral control does not identify the source of control.

Accurate prediction requires the presence of several conditions since the theory of planned behavior states that the performance of a behavior is a result of both intentions and perceived behavioral control (Ajzen, 1991). "First, the measures of intention and of perceived behavioral control must correspond to or be compatible with the behavioral that is to be predicted" (Ajzen, 1991, p. 185). The researcher must measure the intention and the perceived behavioral control of the exact behavior, not a generalization of the behavior. "The second condition for accurate prediction is that intentions and perceived

behavioral control must remain stable in the interval between their assessment and observation of the behavior" (Ajzen, 1991, p. 185). The prediction will no longer be accurate if the variables that are measured are allowed to fluctuate. The third condition is that perceived behavioral control should reflect the actual levels of existing control as realistically as possible.

Applications of the Theory of Planned Behavior in Health Contexts

There are several main applications for the theory of planned behavior. Godin and Kok (1996) reviewed the application of the theory of planned behavior to health-related behaviors. They included 56 studies that examined behaviors in one or more of the following categories: addictive, clinical or screening, diving, eating, exercising, HIV/AIDS, and oral hygiene. They found that the theory was generally effective in explaining the intentions of individuals to perform the health-related behavior observed in the study. The combination of the individuals' attitude toward the behavior, the subjective norms, and the perceived behavioral control successfully predicted the individual's intention to perform the specific health-related behavior. The theory's effectiveness in predicting the actual behaviors, however, varied between categories (Godin & Kok, 1996). For example, the researchers found that "the R^2 was quite low for clinical and screening behaviors, whereas much higher values were observed for addictive and HIV/AIDS-related behavioral categories" (Godin & Kok, 1996, p. 93-94). They draw on the supposition that the failure of the individual to perform the behavior may be a result of the intervention of environmental factors or personal barriers during the steps taken to accomplish the behavior.

Other research has presented different results. Albarracín, Johnson, Fishbein, and Muellereile (2001) examined the use of both the theory of reasoned action and the theory

of planned behavior in the context of condom use using a meta-analysis. The researchers chose only studies that included condom use, a measure of condom use behavior or the intention to use a condom, measures of attitudinal and normative factors, measures of perceived behavioral control (in the case of the utilization of the theory of planned behavior in the study) and the presence of meaningful statistics (Albarracín et al., 2001). The results of their meta-analysis indicated that both "the theories of reasoned action and planned behavior are highly successful predictors of condom use" (Albarracín et al., 2001, p. 155).

This finding contrasts with the findings in the Godin and Kok (1996) meta-analysis. The results in the Albarracín et al. (2001) study suggested that the theory of planned behavior predicted both intentions and behavior. They found that "people are more likely to use condoms if they have previously formed the corresponding intentions. These intentions to use condoms appear to derive from attitudes, subjective norms, and perceived behavioral control" (Albarracín et al., 2001, p. 155). The authors conclude that changing the intentions to use condoms will ultimately work to decrease the incidences of HIV/AIDS in the world.

Norman, Conner, and Bell (1999) examined the theory of planned behavior in the context of smoking cessation. They looked at a sample of 84 individuals who were currently smokers and who attended health promotion clinics. The researchers gave the respondents questionnaires that measured the primary components of the theory of planned behavior, past attempts to quit smoking, and perceived susceptibility (Norman et al., 1999). Through regression analyses, the researchers produced results that were in concordance with the observations of Godin and Kok (1996) in terms of addictive

behaviors. Norman et al. (1999) suggested that the theory of planned behavior was "highly predictive of smokers' intentions to quit, explaining almost 50% of the variance in behavioral intentions" (Norman et al., 1999, p. 92). They also found that the perceived behavioral control was the most important predictor of intention. In terms of behavior, the researchers found the theory to effectively predict the smokers' attempts to quit smoking over the six months that followed the completion of the questionnaires. The intention, rather than the perceived behavioral control, surfaced as the most significant predictor of the actual performance of the behavior (Norman et al., 1999). However, the theory was unable to predict the success or lack of success for a cessation attempt. In summary, this study found that the theory of planned behavior contains some of the necessary variables for determining behavior, but does not encompass all of them (Norman et al, 1999).

Sheeran, Conner, and Norman (2001) also examined the theory of planned behavior in a health context. They looked specifically at patterns of change in health behaviors resulting from a health screening. The researchers distributed a questionnaire to 407 respondents who have never before had a health screening. Similarly to the study conducted by Norman et al. (1999), Sheeran et al. (2001) measured the constructs of the theory of planned behavior in terms of attending health screenings. The researchers found that the respondents' intentions and the perceived behavioral control were important predictors, but explained a smaller proportion of variance in behaviors in comparison to other studies. They argued that this was because the respondents had never before attended a health screening, and therefore, may have had less stable intentions regarding their performance. This instability would have indicated a weaker

relationship between intentions and behavior (Sheeran et al., 2001). The study indicated a major weakness in the application of the theory of planned behavior. The researchers note: "Although the theory of planned behavior predicted attendance versus nonattendance, and frequency of attendance, at a health screening, this model could not discriminate among participants who consistently attended, those who delayed attending, and those who did not maintain attendance" (Sheeran et al., 2001). The researchers suggested the inclusion of additional predicting elements to account for the specific variance in this application.

Applications of the Theory of Planned Behavior in Technological Contexts

Researchers have also used the theory of planned behavior to a lesser extent in the context of adoption of technologies. Mathieson (1991) conducted a study that compared the use of the theory of planned behavior with the use of the technology acceptance model in the context of technology adoption. He explains that the technology acceptance model is designed to explicate behaviors regarding computer usage. Both models attempt to predict individuals' behaviors, but there are implicit differences between the two. The first difference is in the degree of generality. Ajzen constructed the theory of planned behavior to allow for different beliefs in different contexts, whereas the technology acceptance model "assumes that beliefs about usefulness and ease of use are always the primary determinants of use decisions" (Mathieson, 1991, p. 178). In other words, the theory of planned behavior allows for a lack of generalizability in the beliefs regarding a behavior, but the technology acceptance model does not. The second difference is that, while the theory of planned behavior includes social variables such as social norms, the technology acceptance model does not (Mathieson, 1991). The argument is that social norms are not independent of the outcome in the context of the

adoption of technology, so they need not be included in the technology acceptance model. The third difference is in the treatment of behavioral control. Mathieson (1991) states that the technology acceptance model only incorporates the ease of use of a computer technology, while the theory of planned behavior incorporates both internal and external forces and barriers in its perceived behavioral control.

Mathieson's (1991) research focused on the adoption and use of information systems within organizations using both the theory of planned behavior and the technology acceptance model. He selected a sample of college students who were taking an introductory computer class for credit. The researcher gave the respondents questionnaires via one of two computer programs designed by Mathieson. The first computer program delivered a questionnaire based on the technology acceptance model and the second computer program delivered a questionnaire based on the theory of planned behavior.

Mathieson (1991) found that both the technology acceptance model and the theory of planned behavior worked to explain the variance in intentions to use information systems. In addition, the results suggested that the technology acceptance model explained more of the variance than did the theory of planned behavior, but not to the extent where the researcher was confident in asserting that one model was better than the other (Mathieson, 1991). The results indicated that the perceived behavioral control element of the theory of planned behavior worked to provide more specific information regarding beliefs, attitudes, and perceived barriers of the respondents. The technology acceptance model provided information only on respondents' perceptions about the ease of use of the program. Mathieson (1991) points out that there have been specific

instruments developed for the technology acceptance model whereas the instrument of measurement for the theory of planned behavior has to be constructed for each specific instance. In summary, the theory of planned behavior provided equitable explanation of variance and more specific information than the technology acceptance model in the context of technology-adoption. However, the technology acceptance model was easier to apply (Mathieson, 1991).

Lynne, Casey, Hodges, and Rahmani (1995) used the theory of planned behavior in the context of the adoption of water saving technology by Florida strawberry farmers. The researchers selected a stratified random sample of Florida's strawberry producer population. The researchers then conducted personal interviews with each producer in the sample. They found that perceived behavioral control was an important predictor for an individual's adoption of the water saving technology. The researchers suggested the ability of perceived behavioral control to explain behavioral variance was in part due to the producers' familiarity with the technology (Lynne et al., 1995). Sheeran et al. (2001) later found supporting results. The researchers suggest that their findings support the construct validity of the theory of planned behavior in the context of technology adoption decisions.

Efficacy and Generalizability of the Theory of Planned Behavior

Armitage and Conner (2001) performed a meta-analysis of applications of the theory of planned behavior in order to determine the overall efficacy of the theory of planned behavior. The researchers looked at 185 independent studies that sought to measure the constructs in the theory of planned behavior. The researchers did the studies in numerous contexts. In accordance with the results of the meta-analysis done by Godin and Kok (1996), Armitage and Conner (2001) found that studies overall indicated that the

theory of planned behavior worked well to predict the intention to perform a behavior. They found that the theory explained 39% of the variance in intention (Armitage and Conner, 2001). Their findings also compare positively with previous meta-analyses in that they found that the theory of planned behavior worked to explain 27% of the variance in behavior. The perceived behavioral control construct was found to "contribute uniquely to the prediction of behaviour, demonstrating the efficacy of the [theory of planned behavior] construct" (Armitage & Conner, 2001, p. 486). However, they also found that the theory was more effective in predicting self-reported behavior than it was in predicting behavior that was observed. Armitage and Conner (2001) concluded that the theory of planned behavior was an effective predictor of both intention and behavior in a wide variety of contexts. They also concluded that the perceived behavioral control construct could also act as an independent predictor in several different situations.

The Use of the Theory of Planned Behavior in This Study

This study did not aim to measure the constructs of the theory of planned behavior directly. Rather, the theory provided the lens through which the findings of the study were examined. This study attempted to provide a description of Florida Extension agents' attitudes toward engaging in programs that focus on different aspects of CFS by measuring their level of interest in these types of programs. The study also examined the subjective norms by asking in what CFS-focused programs they are currently or have previously been involved. Finally, the study attempted to describe the levels of perceived behavioral control by describing both the level of organizational support the extension agents feel they are currently receiving to engage in programs that focus on CFS and how

much organizational support they would be interested in for participating in these types of programs.

Summary

This chapter provided the groundwork for research on community food security and the Cooperative Extension System in the state of Florida. The chapter explained the historical and developmental framework for current extension systems, both on a national and a state level. The chapter also provided evidence that the goals of current extension systems are compatible with the elements of community food security. Finally, this chapter explained the theoretical framework for this study.

CHAPTER 3
THE RESEARCH PROTOCOL

Introduction

This study described the knowledge and perceptions of Florida Extension agents regarding community food security in their respective counties as well as their perceptions of organizational support levels for engaging in community food security-focused programming. This chapter provides an overview of the research design used for the study. This chapter will also describe the methods and instrumentation used for data collection, the participants in the study, and the data collection procedures. The chapter is organized by the study's six objectives and their respective sub-objectives. The objectives are as follows:

- Objective 1: To identify Florida Extension agents' levels of knowledge regarding community food security
    - Objective 1a: To describe Florida Extension agents' levels of knowledge regarding community food security
    - Objective 1b: To compare knowledge levels among groups of Florida Extension agents based on demographic characteristics
- Objective 2: To identify Florida Extension agents' perceptions of community food security in their respective counties
    - Objective 2a: To describe Florida Extension agents' perceptions of community food security in their respective counties
    - Objective 2b: To compare Florida Extension agents' perceptions of community food security based on demographic characteristics
- Objective 3: To identify Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs

  - Objective 3a: To describe Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs
  - Objective 3b: To compare Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs

- Objective 4: To identify Florida Extension agents' levels of interest in receiving different dimensions of organizational support for participation in community food security-focused programs
  - Objective 4a: To describe Florida Extension agents' levels of interest in receiving different dimensions of organizational support for participation in community food security-focused programs
  - Objective 4b: To compare Florida Extension agents' interest levels in organizational dimensions of support based on demographic characteristics
- Objective 5: To identify and describe Florida Extension agents' current levels of participation in community food security-focused programs
- Objective 6: To identify and describe associations between dependent variables

Research Design

The study "The Knowledge, Perceptions, and Behaviors of Florida Extension Agents Regarding Community Food Security" is a descriptive study that takes the form of a single-method survey research design as defined by Ary, Jacobs, and Razavieh (2002). The researcher used a web-based, questionnaire instrument as a census survey to collect data from all Florida Extension agents.

Subjects

The study's population consisted of a census of all Florida Extension agents, including extension agents classified as county extension directors. The researcher obtained the list of current extension personnel as the most recent personnel listing at the

time of the data collection. The population was N=324 for extension agents, including county extension directors.

Instrumentation

The researcher developed a questionnaire instrument that consisted of four main components: a standardized knowledge test, a Likert scale, a set of five indices, and a section with demographic questions (Appendix A). The purpose of this questionnaire was to identify information relevant to the six objectives of this study. The researcher submitted the instrument to the University of Florida's Institutional Review Board and they approved it (Appendix B).

Objective 1: To Identify Florida Extension Agents' Levels of Knowledge Regarding Community Food Security

Objective 1a: To describe Florida Extension agents' levels of knowledge regarding community food security

The researcher used a standardized knowledge test to achieve the first objective and sub-objective for this study. The purpose of the knowledge test in this instrument was to measure the amount of knowledge respondents have regarding CFS as a concept. The researcher sent emails to a panel of 11 experts consisting of faculty members and other significant researchers or practitioners in the field of CFS. The researcher selected these experts by identifying major organizations or research studies in the field of CFS. The eleven people selected were the most prominent names found in CFS-related research and conceptual papers. The researcher asked the experts to respond to the emails with their perceptions of concepts that are essential to CFS. Six experts responded to the emails. A priori, the researcher set a minimum level of 80% of responses for a concept to be included. This process ensured the content validity of the instrument as described by

DeVellis (1991). Table 3-1 illustrates the seven concepts that occurred in over 80% of the responses.

Table 3-1. Panel of expert responses of community food security concepts, Florida, 2005

Concept	Percentage of Responses
Food Access	100
Social Justice	83
Locally Based Food Systems	100
Sustainability	83
Safe Food	100
Culture	83
Nutrition	83

The researcher developed the standardized knowledge test by composing questions regarding the definition, the essential concepts, and applications of CFS, based on the seven concepts as provided by the panel of experts. The researcher developed the questions using the steps suggested by Shultz and Whitney (2005). The researcher used Bloom's Taxonomy of Educational Objectives to construct the knowledge test. Bloom divided this taxonomy into six categories, each increasing in complexity: knowledge, comprehension, application, analysis, synthesis, and evaluation (Seddon, 1978; Shultz & Whitney, 2005). The questions ranged from the cognitive levels of knowledge, comprehension, and application. The researcher chose to offer constructed-response questions formatted as true/false and multiple-choice. The majority of the questions in the standardized test were knowledge-based, some comprehension-based, and two questions that were application-based.

The researcher sent the questions to a panel of 32 experts in the field of sustainable agriculture, as suggested by Shultz and Whitney (2005). These experts were state sustainable agriculture coordinators in the southern region for Sustainable Agriculture Research and Education (SARE). The researcher decided a priori that those questions that

were unanimously answered either correctly or incorrectly were to be discarded. There were a total of 12 responses from the panel of experts. The test was left with 10 questions after the researcher removed all questions answered correctly or incorrectly by all 12 experts.

Objective 1b: To compare knowledge levels among groups of Florida Extension agents based on demographic characteristics

In order to be able to compare knowledge levels among extension agent groups, the questionnaire prompted respondents to provide their demographic characteristics. The questions asked for such information as gender, rank within extension, whether or not they were a county extension director, their program focus, and the extension region in which they worked. This categorization of respondents provided the basis for the comparison of knowledge scores among groups.

Objective 2: To Identify Florida Extension Agents' Perceptions of Community Food Security in Their Respective Counties

Objective 2a: To describe Florida Extension agents' perceptions of community food security in their respective counties

The researcher used two question types to address the second objective in this study. The first question type was a Likert scale. The purpose of the Likert scale in this instrument was to measure respondents' perceptions of CFS in the county in which they worked. "When a Likert scale is used, the item is presented as a declarative sentence, followed by response options that indicate varying degrees of agreement with or endorsement of the statement" (DeVellis, 1991, p. 68). Although CFS is composed of several concepts, the goal of the Likert-scale in this instrument was to address CFS as a single construct. DeVellis (1991) states that the measurement of a general construct is legitimate if it meets the needs of the researcher. The researcher decided to design a new

scale because there were no pre-existing scales that measure attitudes regarding CFS. There was also no CFS theory to guide the development of a scale on this topic. The researcher conducted the scale to reflect the essential concepts of CFS gleaned from the responses from the panel of experts. DeVellis (1991) stated that, in the absence of an extant theoretical framework, "a well-formulated definition of the phenomenon they wish to measure" (p. 52) can be sufficient.

The researcher developed a list of 139 statements that were reflective of all seven concepts in the panel's responses. Henerson, Morris, and Fitz-Gibbon (1987) state that it is best to begin with a large pool of statements that includes a range of opinions, from strongly negative to strongly positive. DeVellis (1991) suggests that the researcher develop the items to reflect the intended construct of the scale. The researcher worded the statements to reflect different aspects of CFS. Some were redundant expressions of similar or identical thoughts. "By using multiple and seemingly redundant items, the content that is common to the items will summate across items, while their irrelevant idiosyncrasies will cancel out" (DeVellis, 1991, p. 56). The statements were written to have a fairly equal balance between strongly negative statements, mildly negative statements, mildly positive statements, and strongly positive statements. DeVellis (1991) suggests that positive and negative wording can prevent respondents from having an agreement bias.

The researcher then randomized the statements and gave them to a panel of 20 judges, as recommended by Henerson et al. (1987). The panel of judges consisted of 20 student volunteers at the University of Florida. The judges rated the statements on a scale of one to seven, where one indicated the statement was very weak and seven indicated the

statement was very strong. One respondent in the group of 20 judges had clearly reversed the scaling for the responses, indicating low numbers where all others had indicated high numbers and high numbers where all other respondents had indicated low numbers. The researcher removed this response from the panel of judges, leaving 19 usable questionnaires.

The researcher recoded the items so they were all reflecting a positive attitude. The researcher ran a reliability analysis using Cronbach's alpha to measure internal consistency in responses. This statistic "measures the internal consistency of a set of indicators, ranging from zero (no internal consistency) to unity (perfect internal consistency)" (Knoke, Bohrnstedt, & Mee, 2002). There were four respondents who had missed one question each. For the purposes of this test, the researcher decided that it would be acceptable to fill in the mode response for that question. This was necessary to ensure the four respondents would be included in the analysis. The researcher ran the reliability analysis several times. During the first round of analyses, the researcher eliminated statements if they had a Cronbach's alpha of below .60. The adjustment of the statements reflected a balance between weak and strong, and between negative and positive. The second analysis eliminated all statements that fell below .50. This process effectively eliminated all statements that related to "culturally acceptable foods." After the tests, there were 54 statements that collectively had an even distribution between strong and weak, negative and positive, and had a Cronbach's alpha of at least .5.

The researcher sent the statements and the knowledge test questions to the panel of 32 SARE state coordinators. The statements had a five point Likert-like scale where one indicated *strongly disagree*, three indicated *neutral,* and five indicated *strongly agree*.

There were 12 responses from this panel of experts. The researcher followed the steps suggested by Henerson et al. (1987) to select the statements for the Likert scale. The researcher performed independent sample t-tests on each statement to discriminate between opinions. Each of the 12 respondents received summative scores for their responses after the researcher recoded the statements to reflect a positive attitude. The researcher compared the top ranking 25% of statements to the bottom ranking 25% and vice versa. The researcher then chose 15 statements with p-value pair scores of under .03. The statements remained fairly equal in number of strongly positive, positive, negative and strongly negative. This process eliminated all statements that related to "social justice." Two of the 15 statements were oriented around food access and were deemed to not have worked as well. These were also discarded. The remaining 13 statements comprised the Likert scale. The 13 remaining statements reflected five of the seven essential components of CFS: food access, food safety, nutrition, sustainable agriculture, and local food systems.

The researcher used a supplementary index to provide additional insight into the perceptions of respondents regarding CFS in their counties. This index was the second question type used to achieve the second objective in this study. The purpose of the supplementary index in this case was to describe the respondent's perceptions of the relevance of specific components of CFS in their counties. The researcher decided to construct the index so that it reflected only the five components of CFS represented in the Likert scale. The index only referred to the concepts in the Likert scale because the researcher designed the index to provide additional insight into the measurements of the scale. The researcher designed a set of statements followed by a scalar set of response

options. The questionnaire prompted respondents to indicate the level of relevance they perceived in their counties for each of the five facets of CFS. A four-point scale followed each question, where one corresponded with *not at all relevant* and four corresponded with *very relevant*.

Objective 2b: To compare Florida Extension agents' perceptions of community food security based on demographic characteristics

The researcher used the demographic characteristics described above to compare the scores derived for each respondent's answers to the Likert scale. The demographic characteristics also provided a comparison for respondents' perceptions of the relevance of individual components of CFS. The researcher used the combination of these two comparisons to fulfill the second sub-objective for this study.

Objective 3: To Identify Florida Extension Agents' Perceptions of Organizational Levels of Support for Participation in Community Food Security-Focused Programs

Objective 3a: To describe Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs

The questionnaire presented respondents with a series of five questions regarding the level of organizational support the respondents were currently receiving in order to participate in CFS-focused programs. Each question asks about support regarding programs that focus on a different aspect of CFS. The respondents indicated the level of support on a four-point scale, where one corresponds with *no support* and four corresponds with *a great deal of support*.

Objective 3b: To compare Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs

The researcher used the demographic characteristics to compare respondents' perceptions of organizational support levels among extension agents grouped by characteristics.

Objective 4: To Identify Florida Extension Agents' Levels of Interest in Receiving Different Dimensions of Organizational Support for Participation in Community Food Security-Focused Programs

Objective 4a: To identify Florida Extension agents' levels of interest in receiving different dimensions of organizational support for participation in community food security-focused programs

The researcher used a series of five indices to describe the types of support respondents would like to receive for educational programming that addresses the CFS component. The researcher measured the levels of interest in the support on a four-point scale, where one indicated *not at all interested* and four indicated *very interested*. There were six dimensions of organizational support in the index: professional development opportunities, time, financial support, the availability of specialist support, acknowledgement in performance appraisals, and an established curriculum. The researcher developed these dimensions of organizational support with an extension professional with an extensive background in extension education and educational programs.

Objective 4b: To compare Florida Extension agents' interest levels in organizational dimensions of support based on demographic characteristics

The researcher used the demographic characteristics to compare respondents' interest levels by extension agent characteristics. The researcher examined each dimension of organizational support separately, based on respondent demographic characteristics.

Objective 5: To Identify and Describe Florida Extension Agents' Current Levels of Participation in Community Food Security-Focused Programs

The questionnaire prompted respondents to indicate in which types of CFS-focused programs they had participated in the last year. The question was in a 'select all that apply' format. The types of programs foci listed were:

- Food-access issues
- Food-safety issues
- Nutrition issues
- Sustainable agriculture issues
- Cultural aspects of the food system
- Social justice issues
- Local food system issues
- None of the above

Respondents were able to check each of the program types in which they had participated in the last year.

Respondent Data Collection

The researcher used a web-based program called Zoomerang © to distribute the questionnaire to the respondents. The researcher chose this method because of its low cost, dynamic interaction possibilities, uncomplicated distribution, and ease of return for recipients. These aspects outweighed the limitations of this method, as discussed by Dillman (2000): respondents may not have a computer, respondents may not have internet access, and respondents may not feel confident enough in their abilities to work on a computer to take an internet questionnaire. The researcher decided that most extension agents would have access to a computer and internet connection at their place of work.

The researcher conducted a pilot test with the final draft of the instrument. Ary et al. (2002) stated that pilot studies can "help the researcher to decide whether the study is

feasible and whether it is worthwhile to continue. It provides an opportunity to assess the appropriateness and practicality of the research methodology" (p. 111). The researcher sent a link to the instrument in an email. The respondents for the pilot test consisted of eight extension agents from Cornell Cooperative Extension in New York and 15 extension agents from Pennsylvania Extension. The researcher made minimal changes to the instrument based on the feedback of the pilot study participants.

The researcher performed the data collection procedures as suggested by Dillman (2000). The first step in the data collection process was a pre-notice postcard. The researcher sent the postcard to the study's population through the mail. The postcard notified the recipients that they would receive a questionnaire via email in the next few days. The researcher hand-addressed the postcards for each recipient. The postcards had the same textual information typed onto each card. The postcard also contained the researcher's and Dr. Nick Place's (supervisor) signatures and contact information for questions. The goal of the postcard was to notify the recipients that they were going to receive an email with a web-link to the questionnaire and to encourage them to participate. The goal was also to prevent recipients from deleting the email without looking at the content (Appendix C).

The researcher emailed the questionnaire to the population one week after the postcard. The researcher grouped the emails by county, so the only recipients' names in the emails were coworkers in the same county. The email explained how to link to the questionnaire and provided the researcher's contact information for questions or technical issues (Appendix D). The researcher sent out a reminder email with the link and contact information one week after the initial email had been sent. The researcher only sent the

reminder email to those who had not yet responded to the questionnaire (Appendix E). Finally, the researcher sent a third email to remaining non-respondents one and a half weeks after the second email. The researcher addressed the third email by county, like the second email. This email used the names of the recipients in the greeting of the message. It also contained the link to the questionnaire and the researchers' contact information (Appendix F).

Data Analysis Procedures

The researcher analyzed the first objective using a point scale designated for each knowledge-based question a priori. The researcher assigned one point for each question that was knowledge-based, two points for each question that was understanding-based, and three points for each question that was application-based. The exception to this was with the question that had a 'select all that apply' format. There were seven correct answers possible. Respondents scored one point if they selected between one and three of the correct answers. They scored three points if they selected between four and seven of the correct answers. The resulting score range was zero points for all incorrect answers to 19 points for all completely correct answers.

The researcher analyzed the second objective using a summated scale score since the Likert scale was designed to measure a single construct. A summated scale score is achieved by summing the responses for the Likert scale for each respondent. The researcher summed the scores after recoding the directionality of each corresponding statement for uniformity. The researcher calculated the Cronbach's alpha coefficient for the scale in order to determine the reliability and internal consistency of the scale. Reliability is defined as "the extent to which different operationalizations of the same concept produce consistent results" (Knoke et al., 2004, p. 13). A scale is reliable if the

alpha score is .70 or higher (Sweet & Grace-Martin, 2003). In addition, the researcher used correlations to describe relationships between the variables in the first and second objectives. The analyses included Pearson's correlations, one-way ANOVA, and t-tests.

The researcher analyzed the questions relating to the second and third objectives using scores obtained through a summary of mean responses to questions focused on similar constructs. The researcher sorted the questions into the categories 'relevance of CFS in county' and 'current levels of organizational support.' The researcher calculated basic descriptive statistics to fulfill the descriptive nature of these two objectives. The researcher then used independent t-tests and ANOVAs to compare means between extension agent groups. This fulfilled the sub-objectives for each of these main objectives.

The researcher calculated a summary of mean responses to questions regarding personal interest in receiving each of the six dimensions of organizational support. Basic descriptive statistics described extension agents' interest levels as a population and by demographic group. This fulfilled the fourth objective for this study. The researcher used independent t-tests and ANOVAs to compare groups interest level means for each dimension of organizational support. This fulfilled the second sub-objective for the fourth objective.

The researcher addressed the fifth objective for this study by describing participation or non-participation in the CFS-focused groups using basic descriptive statistics. The researcher provided more insight in the participation by using chi-square tests to identify associations between participation in the different types of programs and extension agent characteristics.

Finally, the researcher addressed the sixth objective in this study by calculating Pearson correlation coefficients and performing additional independent t-tests to explore correlations and relationships between the dependent variables in this study.

Nonresponse Error

Dillman (2000) describes nonresponse error as the possibility that those who do not respond to a survey or do not provide usable responses differ from those who do respond and provide usable responses. Lindner, Murphy, and Briers (2001) cite five generally accepted, possible procedures for addressing nonresponse error. These are: "ignore nonrespondents, compare respondents to population, compare respondents to non-respondents, [and] compare early respondents to late respondents" (Lindner et al., 2001, p. 44). For the purposes of this study, the researcher decided it would be appropriate to utilize the fourth of these recommended procedures and compare the early to the late respondents in this study. In order to avoid a threat to the external validity of this study, the researcher used extrapolation methods. These methods assume that late responders are similar to nonresponders (Lindner et al., 2001). For the purpose of this study, the researcher defined 'late responders' as those who responded to the last wave of reminder emails and 'early responders' as those who responded to the first wave of emails, as suggested by Lindner et al. (2001). Ninety-six respondents completed questionnaires after the first wave email, an additional 41 respondents completed questionnaires after the second wave email, and 64 respondents completed questionnaires after the third wave email. The researcher divided the respondents into two groups of 30 for comparison purposes.

The researcher first used independent t-tests to compare the late responders with the early responders on variables of interest. Specifically, the researcher examined the

groups in terms of knowledge score means and summated scale scores for the Likert scale in the survey. The t-tests failed to provide evidence that the groups differed in their means in either case (α=.05). Second, the researcher examined the early and late respondents in terms of characteristics. The researcher used the chi-square statistical significance test to determine whether the early and late respondents were different in terms of gender, rank, CED status, time spent with their current county, district, or program focus. In each case, the chi-square statistic did not provide evidence of an association with one group or the other. In light of these results, the researcher felt confident in the external validity of this study.

Summary

This chapter provided an overview of the construction of each component of the instrument used in this study. The chapter also explained how the instrument served to describe or measure each of the six objectives for this study. In addition, the chapter served to explain how the respondents were selected, contacted, and how the instrument was distributed to them. Finally, this chapter served to address how the researcher planned for data analysis for each component of the questionnaire, as well as how the researcher accounted for nonresponse error in this study. The following chapter will serve to provide specific information on data analysis procedures and results. These results will be discussed in Chapter Four.

CHAPTER 4
RESULTS

Although there are many possibilities for extension programs and collaboration with other organizations, Florida Extension employs methods such as needs assessments and extension agent professional development to utilize its resources in the best, most effective way possible. It is for this reason that it is important to discover and describe Florida Extension agents' knowledge of possible areas for collaboration, their perceptions of community needs, and their perceptions of organizational support to address those needs. The purpose of this study was to examine the knowledge and perceptions of Florida Extension agents regarding community food security. This chapter provides the comprehensive results of the study in order to describe Florida Extension agents' knowledge and perceptions of CFS. The chapter presents the results within the six study objectives.

Population

The researcher collected demographic characteristics from the extension agents in Florida to provide a portrait of the population. The researcher sent the questionnaire to 324 Florida Extension agents. A total of 201 respondents successfully completed and submitted the online questionnaire, for a response rate of 62%. This group and their demographic characteristics are in Table 4-1. Of these respondents, 66% were female and 34% were male. The questionnaire prompted respondents to report their rank as an extension agent and whether or not they were also a county extension director (CED). The largest group reported having the rank of Agent I (33% of all respondents), while the

second largest group reported having the rank of Agent IV (28% of all respondents). Five respondents indicated that they had a rank other than the four ranks offered as answer options. Nineteen percent of respondents indicated that they were currently a CED in their county.

The questionnaire also prompted respondents to indicate both the amount of time they have spent with their current county and the time they have spent with extension overall. The researcher eliminated the question asking about time spent overall for data analysis purposes, since in most cases the respondents indicated the same option for time with current county and time spent overall. The researcher used the question regarding the time they have spent with their current county in data analysis. The largest of these groups reported that they have been with extension in their current county for two to five years (37% of all respondents). The next largest group reported that they had been with their county for more than 15 years (24% of all respondents).

Finally, the questionnaire prompted respondents to indicate their program focus and the county in which they served. Twenty-eight percent of respondents indicated that their program focus was agriculture. No respondents indicated that their program focus was energy and two respondents indicated that their program focus was community development. The researcher combined these two groups with the group that indicated 'other' for their program focus for data analysis purposes. This group constituted 7.5% of all respondents. Similarly, the researcher also reduced reported counties into the five districts in which they are categorized. The researcher created a sixth category for those who reported working more than one district's counties. This final category was 3% of the population.

Table 4-1. Demographic profile of Florida Extension agent respondents, Florida, 2006.

Characteristic	Frequency	Percent
Gender		
Male	68	33.8
Female	133	66.2
Rank		
Agent I	67	33.3
Agent II	47	23.4
Agent III	27	13.4
Agent IV	55	27.4
Other	5	2.5
CED	38	18.9
Time with Current County		
Less than one year	23	11.4
2-5 years	74	36.8
6-10 years	42	20.9
11-15 years	13	6.5
More than 15 years	49	24.4
Program Focus		
Agriculture	57	28.4
Natural Resources	5	2.5
Urban Horticulture	31	15.4
Family & Consumer Sciences	44	21.9
4-H	40	19.9
Sea grant	9	4.5
Other	15	7.5
District		
Northwest	39	19.4
Northeast	39	19.4
Central	45	22.4
South Central	44	21.9
South	28	13.9
More than one District	6	3.0

Objectives

Objective 1: To Identify Florida Extension Agents' Levels of Knowledge Regarding Community Food Security

Objective 1a: To describe Florida Extension agents' level of knowledge regarding community food security

The questionnaire included a standardized knowledge test to determine Florida Extension agents' knowledge levels of CFS, as determined by a panel of experts. The level of difficulty of questions served as the basis for the scoring system. The score range was zero points if none were correct, to 19 points if all questions were answered completely correctly. No respondents received a zero for none correct or a score of 19 for perfect responses. The score range for the population was between 1 and 17 points. The overall population had a mean score of 9.49 with a standard deviation of 3.38. The scores are reported by population and by demographic group in Table 4-2.

Table 4-2. Florida Extension agents' knowledge scores* descriptive statistics, Florida, 2006.

Group	n	Mean	S.D.	Range	
				Min	Max
Overall Population	201	9.49	3.38	1.00	17.00
Gender					
Male	68	9.05	3.23	3.00	17.00
Female	133	9.73	3.44	1.00	16.00
Rank					
Agent I	67	10.04	3.43	4.00	17.00
Agent II	47	9.74	3.43	1.00	16.00
Agent III	27	9.48	3.20	4.00	15.00
Agent IV	55	8.56	3.26	2.00	16.00
Other	5	9.80	3.77	4.00	14.00
CED					
Yes	38	8.66	3.51	3.00	15.00
No	163	9.68	3.33	1.00	17.00

*Scores on a scale of zero points for all incorrect to 19 points for all perfect responses

Table 4-2. Continued.

Group	n	Mean	S.D.	Range Min	Range Max
Time in Current County					
< 1 year	23	10.00	2.69	5.00	15.00
2-5 years	74	10.62	3.42	4.00	17.00
6-10 years	42	8.50	3.14	1.00	15.00
11-15 years	13	7.54	2.60	4.00	13.00
> 15 years	49	8.90	3.46	2.00	16.00
Program Focus					
Agriculture	57	9.70	3.18	4.00	17.00
Natural Resources	5	10.00	4.06	4.00	15.00
Urban Horticulture	31	9.93	2.73	4.00	15.00
Family & Consumer Sciences	44	9.43	3.26	1.00	14.00
4-H	40	9.26	3.80	3.00	16.00
Sea Grant	9	9.11	5.13	3.00	16.00
Other	15	8.66	3.50	4.00	15.00
District					
Northwest	39	9.82	3.16	4.00	15.00
Northeast	39	11.36	3.06	4.00	17.00
Central	45	8.24	2.96	1.00	14.00
South Central	44	8.68	3.42	2.00	15.00
South	28	9.78	3.69	4.00	16.00
>1 District	6	9.00	3.10	3.00	12.00

*Scores on a scale of zero points for all incorrect to 19 points for all perfect responses

Objective 1b: To compare knowledge levels among groups of Florida Extension agents based on demographic characteristics

The researcher compared the knowledge score means of extension agent groups using one-way analysis of variance and independent t-tests. The researcher used histograms for the knowledge scores to check for normal distribution before performing the ANOVA and t-tests. The researcher performed Levene's homogeneity of variance to meet the assumption of equality of variance for ANOVA. In addition, the researcher assumed that the groups being compared were independent.

The ANOVA comparing knowledge scores showed that there was evidence of a statistically significant difference among districts (P=.001; α=.05). The researcher calculated Eta^2 to show that district accounted for 10.6% of the variance in knowledge scores among Florida Extension agents (Table 4-3). In addition, the Duncan post hoc test identified differences in subset groups. The test revealed two homogeneous subsets at the .05 level. The first group consisted of the Northwest, Central, South Central, and South Districts. The second homogenous subset consisted of The Northwest, Northeast and South Districts.

Table 4-3. One-way analysis of variance of Florida Extension agent knowledge scores by district, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	5	242.930	48.59		4.64	.001
Within	195	2041.289	10.46			
Totals	200	2284.216		.106		

The ANOVA comparing mean knowledge scores between the groups reporting their time spent in their current county showed evidence of significance at the .05 level (P=.001). The Eta^2 showed that the extension agents' reported time spent with their current county accounted for about 9% of the variance in knowledge scores (Table 4-4). In this case, the Duncan post hoc test revealed three separate homogeneous subset groups at the .05 level. The first group consisted of those who had spent 6-10 years with their current county, those who had spent 11-15 years with their current county, and those who had spent more than 15 years with their current county. The second subset included those who had spent less than one year, those who had spent 6-10 years and those who had spent more than 15 years with their current county. The third subset included those who

had spend less than one year, those who had spent 2-5 years and those who had spent more than 15 years with their current county.

Table 4-4. One-way analysis of variance of Florida Extension agents' knowledge scores by time spent in current county, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	4	208.593	52.15		4.92	.001
Within	196	2075.626	10.59			
Totals	200	2284.219		.091		

Objective 2: To Identify Florida Extension Agents' Perceptions of Community Food Security in Their Respective Counties

Objective 2a: To describe Florida Extension agents' perceptions of community food security in their respective counties

The researcher generated two scores to describe Florida Extension agents' perceptions about CFS. The first was a summated score derived from the Likert scale. The scale consisted of both negatively and positively phrased statements. Each statement had answer options that were presented on a scale of one to five, where one indicated *strongly disagree* and five indicated *strongly agree*. The researcher recoded the items so they all were positive. Once the responses were recoded, the researcher performed a reliability analysis using the 13 items on the scale. The Cronbach's alpha for the scale was .545. If one were to remove the second, eighth, eleventh, and thirteenth items from the scale, there would be nine items remaining with a Cronbach's alpha of .617.

The researcher gave each respondent a summated score by summing their responses. The scores could range from 13, which would indicate all strongly negative responses and 65 which would indicate all strongly positive responses. There was an overall mean score of 37.38 with a standard deviation of 5.00. No respondents had a summated score of 13 or 65. The minimum score was 24 and the maximum score was 48 (Table 4-5).

Table 4-5. Florida Extension agents' community food security Likert summated scores*, Florida, 2006.

Group	n	Mean	S.D.	Range	
				Min	Max
Overall Population	201	37.38	5.00	24.00	48.00
Gender					
Male	68	38.53	5.16	25.00	48.00
Female	133	36.79	4.83	24.00	47.00
Rank					
Agent I	67	36.61	5.02	24.00	46.00
Agent II	47	37.87	5.40	28.00	48.00
Agent III	27	37.78	3.77	33.00	45.00
Agent IV	55	37.56	5.16	25.00	47.00
Other	5	38.80	5.72	34.00	45.00
CED	38	38.34	4.21	29.00	46.00
Non-CED	163	37.15	5.16	24.00	48.00
Time in Current County					
< 1 year	23	37.49	4.31	28.00	45.00
2-5 years	74	36.97	5.34	24.00	47.00
6-10 years	42	37.54	4.69	27.00	48.00
11-15 years	13	38.23	4.76	32.00	48.00
> 15 years	49	37.57	5.25	25.00	47.00
Program Focus					
Agriculture	57	38.54	4.64	28.00	48.00
Natural Resources	5	33.20	2.95	29.00	37.00
Urban Horticulture	31	38.06	4.93	24.00	46.00
Family& Consumer	44	36.50	4.90	25.00	45.00
4-H	40	36.10	4.91	26.00	46.00
Sea Grant	9	36.44	5.57	26.00	45.00
Other	15	39.47	5.78	30.00	48.00
District					
Northwest	39	38.79	4.40	27.00	47.00
Northeast	39	37.90	4.49	26.00	45.00
Central	45	35.84	5.60	26.00	48.00
South Central	44	37.23	5.03	25.00	47.00
South	28	37.53	5.25	24.00	48.00
>1 District	6	36.67	4.46	33.00	45.00

*Likert summated scales measured on a scale of 13 (strongly negative attitudes) to 65 (strongly positive attitude) regarding community food security in respondents' counties.

The second method for describing Florida Extension agents' perceptions of CFS in their counties was a series of indices. Each index prompted the respondent to indicate the level of relevance or irrelevance of each of five dimensions of CFS in their counties. These dimensions were the same as those represented in the Likert scale: food access, food safety, nutrition, sustainable agriculture, and local food systems. Each dimension had a corresponding four point scale where one indicated *not at all relevant* and four indicated *very relevant*. The researcher calculated each respondent's mean response to each of these questions to reduce the data to one score that was representative of their perceptions of the relevance or irrelevance of CFS issues in their county (Table 4-6). The general population had a mean response of 3.053 with a standard deviation of .573.

Table 4-6. Florida Extension agents' mean response for questions regarding the relevance of community food security in their counties, Florida, 2006.

Group	n	Mean*	S.D.
Overall Population	201	3.053	.573
Gender			
Male	68	2.882	.639
Female	133	3.141	.516
Rank			
Agent I	67	3.044	.504
Agent II	47	3.076	.523
Agent III	27	3.185	.576
Agent IV	55	2.978	.680
Other	5	3.080	.657
CED			
Yes	38	3.057	.659
No	163	3.052	.553

*Response options were 1 *not at all relevant*, 2 *a little relevant*, 3 *somewhat relevant*, and 4 *very relevant*.

Table 4-6. Continued.

Group	n	Mean*	S.D.
Time in Current County			
< 1 year	23	3.130	.437
2-5 years	74	3.089	.547
6-10 years	42	3.061	.540
11-15 years	13	3.092	.646
> 15 years	49	2.946	.673
Program Focus			
Agriculture	57	2.950	.587
Natural resources	5	2.720	.521
Urban horticulture	31	3.032	.529
Family & Consumer Sciences	44	3.304	.468
4-H	40	3.005	.539
Sea Grant	9	2.622	.674
Other	15	3.240	.669
District			
Northwest	39	3.031	.590
Northeast	39	3.051	.546
Central	45	3.037	.624
South Central	44	3.072	.518
South	28	3.121	.574
>1 District	6	2.900	.787

*Response options were 1 *not at all relevant*, 2 *a little relevant*, 3 *somewhat relevant*, and 4 *very relevant*.

Objective 2b: To compare Florida Extension agents' perceptions of community food security in their county based on demographic characteristics

The researcher compared the Likert summated scores of Extension agent groups using one-way analysis of variance and independent t-tests. The researcher used histograms for the summated scores to check for normal distribution before performing the ANOVA and t-tests. The researcher performed Levene's homogeneity of variance test to meet the assumption of equality of variance for ANOVA. In addition, the researcher assumed that the groups being compared were independent.

A t-test revealed evidence to suggest a significant difference between male and female extension agents' perceptions of CFS in their respective counties. Specifically, the t-test evidenced that females had a statistically significantly lower score mean than males (Table 4-7). In other words, females' scores reflected a more negative perspective than did males.'

Table 4-7. Comparison of male and female Florida Extension agents' summated Likert scale scores using t-test, Florida, 2006.

Gender	n	Mean	S.D.	T
Male	68	38.53	5.16	2.36*
Female	133	36.79	4.83	

* $P \leq .05$

The researcher performed an ANOVA to compare summated score means among program foci. The test showed evidence of a significant difference between group mean scores at the .05 level. (P=.027). The researcher calculated Eta^2 which showed that program focus explained 7% of the variance in means in summated scores (Table 4-8). The researcher performed a Duncan post hoc test to identify homogenous subset groups. The test revealed two subsets at the .05 level. The first subset consisted of those who reported their program focus as natural resources, family and consumer science, 4-H and youth development, or Sea Grant. The second subset included those respondents who reported their program focus as agriculture, urban horticulture, family and consumer sciences, 4-H and youth development, Sea Grant, or the 'other' category.

Table 4-8. One-way analysis of variance of Florida Extension agents' Likert scores by program focus, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	6	351.897	58.649		2.442	.027
Within	194	4659.367	24.017			
Totals	200	5011.264		.070		

The researcher used t-tests and ANOVAs to examine the differences between mean responses for questions regarding the relevance of CFS issues in their respective counties. The researcher checked for all assumptions before performing these tests. A t-test compared the relevance means between males and females. The test statistic was -2.893 (α=.05), giving evidence that female means were statistically significantly higher than males (Table 4-9). In other words, the test showed that females indicated higher relevance means than males.

Table 4-9. Comparison of male and female Florida Extension agents' mean response for questions regarding the relevance of community food security in their counties using t-test, Florida, 2006.

Gender	n	Mean	S.D.	T
Male	68	2.882	.639	-2.893*
Female	133	3.141	.516	

* P≤.05

The researcher performed ANOVAs to compare mean responses for questions regarding the relevance of CFS issues in their counties between multiple groups. The ANOVA showed that there was evidence of a statistically significant difference among reported program foci (P=.003; α=.05). The researcher calculated Eta^2 which showed that 9.4% of the variance in perceptions of the relevance of CFS issues can be explained by extension agents' program focus. A Duncan post hoc test revealed two different homogenous subsets at the point .05 level. The first group consisted of those respondents who reported their program focus as agriculture, natural resources, urban horticulture, 4-H and youth development, or Sea Grant. The second subset included those respondents who reported their program focus as agriculture, urban horticulture, family and consumer sciences, 4-H and youth development, and the 'other' category.

Table 4-10. One-way analysis of variance of Florida Extension agents' mean responses for questions regarding the relevance of community food security issues in their counties by program focus, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	6	6.193	1.032		3.372	.003
Within	194	59.387	.306			
Totals	200	65.580		.094		

Objective 3: To Identify Florida Extension Agents' Perceptions of Organizational Levels of Support for Participation in Community Food Security-Focused Programs

Objective 3a: To describe Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs

The questionnaire prompted respondents to indicate levels of organizational support they were currently receiving for participation in programs that focused on any of the five dimensions of food security addressed in the Likert scale. Each dimension had a corresponding four-point answer scale, where one indicated *no support* and four indicated *a great deal of support*. The researcher combined these responses into a mean response representative of the respondents' perceptions of organizational support for data reduction purposes (Table 4-11).

Table 4-11. Florida Extension agents' mean responses* for questions regarding levels of organizational support for participation in community food security-focused programs, Florida, 2006.

Group	n	Mean*	S.D.
Overall Population	201	2.671	.641
Gender			
Male	68	2.615	.632
Female	133	2.699	.646
Rank			
Agent I	67	2.564	.081
Agent II	47	2.668	.637
Agent III	27	2.800	.677

*Response options were: 1 *no support*, 2 *very little support*, 3 *some support*, and 4 *a great deal of support*.

Table 4-11. Continued.

Group	n	Mean*	S.D.
Agent IV	55	2.749	.600
Other	5	2.560	.607
CED			
Yes	38	2.768	.515
No	163	2.648	.666
Time in Current County			
< 1 year	23	2.530	.602
2-5 years	74	2.651	.683
6-10 years	42	2.714	.623
11-15 years	13	2.477	.776
> 15 years	49	2.779	.565
Program Focus			
Agriculture	57	2.639	.540
Natural Resources	5	1.880	.672
Urban Horticulture	31	2.580	.660
Family & Consumer	44	2.950	.569
4-H	40	2.715	.580
Sea Grant	9	2.067	.742
Other	15	2.667	.813
District			
Northwest	39	2.728	.704
Northeast	39	2.748	.588
Central	45	2.564	.587
South Central	44	2.718	.639
South	28	2.600	.764
>1 District	6	2.566	.320

*Response options were: 1 *no support*, 2 *very little support*, 3 *some support*, and 4 *a great deal of support*.

Objective 3b: To compare Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs based on demographic characteristics

The researcher performed t-tests and ANOVAs to compare the mean responses of Florida Extension agents to questions regarding current organizational support. The researcher checked for the tests' assumptions before performing these tests. An ANOVA showed that there was evidence of a significant difference in mean responses between

program foci (P=<.001; α=.05). The researcher calculated Eta^2 to show that program focus explained 12.5% of the variance in mean responses to questions regarding current organizational support (Table 4-12). The Duncan post hoc test revealed two homogenous subsets at the .05 level. The first subset consisted of those who reported their program focus as natural resources of Sea Grant.

Table 4-12. One-way analysis of variance of Florida Extension agents' mean responses to questions regarding levels of organizational support for participation in community food security-focused programs by program focus, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	6	10.231	1.705		4.599	<.001
Within	194	71.926	.371			
Totals	200	82.157		.125		

Objective 4: To Identify Florida Extension Agents' Level of Personal Interest in Receiving Different Dimensions of Organizational Support for Participation in Community Food Security-Focused Programs

Objective 4a: To describe Florida Extension agents' levels of personal interest in receiving different dimensions of organizational support for participation in community food security-focused programs

The questionnaire prompted respondents to indicate their levels of personal interest in receiving six different types of organizational support in order to participate in CFS-focused programs. The related scalar answer options were where one corresponded to *no interest* and four corresponded with *very interested.* The researcher calculated a mean response for these questions and used that mean as a score representative of the respondents' personal interest in organizational support for CFS-focused programs. Thus, each respondent has a mean score representative of their personal interest in each of the six dimensions of organizational support in order to participate in CFS-focused programs. The six dimensions are: professional development opportunities, time, financial support, the availability of specialist support, acknowledgement in performance

appraisals, and the availability of an established curriculum for the program. The means and standard deviations for each group's personal interest in receiving these dimensions of support are found in Table 4-13.

Objective 4b: To compare Florida Extension agents' personal interest levels in organizational dimensions of support based on demographic characteristics

The researcher compared group mean responses to questions regarding the six dimensions of support individually. The researcher compared means between groups using ANOVAs and t-tests. The researcher checked for all assumptions before performing these tests. The researcher checked for normal distribution using histogram representations of the numerical variables. The researcher used Levene's test to check for homogeneity of variance. Finally, the researcher assumed that the variables were independent of one another.

Professional development opportunities to participate in community food security-focused programs

The t-test revealed evidence of a statistically significant difference in means between respondents who were CEDs and respondents who indicated they were not CEDs on questions regarding professional development opportunities (Table 4-14). The test evidenced that CEDs had higher means on a scale where one corresponded to *no interest* and four indicated *very interested.* The higher means indicated that the respondents who indicated that they were currently working as CEDs in their counties were more interested in receiving professional development opportunities in order to participate in CFS-focused programs.

Table 4-13. Florida Extension agents' mean responses* to questions regarding personal interest in dimensions of organizational support for participation in community food security-focused programs, Florida, 2006.

Group	N	Professional Development		Time		Financial Support		Availability of Specialist		Performance Appraisal		Availability of Curriculum	
		M	S.D.	M	S.D.	M	S.D.	M	S.D.	M	S.D.	M	S.D.
Overall Pop.	201	2.666	.784	2.577	.786	2.728	.835	2.739	.817	2.500	.817	2.760	.844
Gender													
Male	68	2.602	.751	2.489	.777	2.677	.864	2.657	.819	2.400	.813	2.591	.812
Female	133	2.698	.800	2.622	.792	2.755	.822	2.780	.816	2.551	.816	2.847	.850
Rank													
Agent I	67	2.663	.845	2.549	.823	2.639	.849	2.706	.871	2.460	.837	2.740	.903
Agent II	47	2.694	.781	2.655	.804	2.817	.842	2.770	.843	2.600	.798	2.834	.845
Agent III	27	2.614	.715	2.593	.735	2.726	.780	2.704	.761	2.578	.800	2.733	.815
Agent IV	55	2.625	.764	2.491	.766	2.724	.862	2.731	.783	2.375	.817	2.702	.813
Other	5	3.160	.590	3.080	.687	3.160	.590	3.160	.590	3.120	.642	3.120	.642
CED													
Yes	38	2.890	.657	2.737	.759	3.053	.813	3.063	.710	2.605	.871	2.932	.770
No	163	2.614	.803	2.540	.792	2.563	.824	2.664	.823	2.476	.804	2.720	.857
Time w County													
< 1 year	23	3.217	.508	3.026	.550	3.174	.498	3.304	.559	3.034	.609	3.357	.556
2-5 years	74	2.700	.757	2.627	.793	2.797	.831	2.741	.784	2.543	.826	2.768	.843
6-10 years	42	2.462	.853	2.361	.809	2.433	.843	2.500	.930	2.320	.805	2.586	.869
11-15 years	13	2.308	.831	2.477	.881	2.615	.968	2.446	.784	2.216	.719	2.554	.821
> 15 years	49	2.625	.745	2.502	.766	2.699	.846	2.755	.763	2.412	.828	2.674	.844

*Response options were: 1 *not at all interested*, 2 *a little interested*, 3 *somewhat interested*, and 4 *very interested*.

Table 4-13. Continued.

Group	N	Professional Development		Time		Financial Support		Availability of Specialist		Performance Appraisal		Availability of Curriculum	
		M	S.D.	M	S.D.	M	S.D.	M	S.D.	M	S.D.	M	S.D.
Program Focus													
Agriculture	57	2.804	.625	2.646	.647	2.846	.693	2.849	.655	2.660	.763	2.870	.706
Nat. Res.	5	1.920	.912	1.680	.626	2.080	1.054	1.920	.889	1.640	.590	2.080	1.054
Urban Hort.	31	2.258	.797	2.290	.834	2.387	.924	2.407	.913	2.161	.800	2.355	.927
FCS	44	3.027	.710	2.936	.746	3.046	.754	3.073	.698	2.877	.772	3.100	.794
4-H	40	2.655	.653	2.620	.693	2.735	.700	2.740	.738	2.455	.712	2.900	.678
Sea Grant	9	1.911	.788	1.800	.748	2.067	1.010	2.000	.854	1.733	.632	1.933	.806
Other	15	2.653	1.049	2.507	.965	2.653	1.062	2.747	1.068	2.360	.885	2.560	.983
District													
Northwest	39	2.667	.705	2.564	.731	2.692	.793	2.697	.796	2.436	.757	2.708	.830
Northeast	39	2.815	.617	2.682	.594	2.856	.670	2.830	.655	2.612	.670	2.887	.663
Central	45	2.760	.830	2.640	.806	2.770	.846	2.822	.839	2.618	.840	2.889	.889
South Cent.	44	2.590	.931	2.559	.985	2.677	1.016	2.705	.968	2.409	.946	2.714	.947
South	28	2.450	.799	2.429	.803	2.600	.836	2.614	.857	2.357	.856	2.607	.848
>1 District	6	2.533	.575	2.333	.450	2.800	.669	2.633	.388	2.667	.628	2.367	.852

*Response options were: 1 *not at all interested*, 2 *a little interested*, 3 *somewhat interested*, and 4 *very interested*.

Table 4-14. Comparison of Florida Extension agents' mean responses indicating personal interest levels in professional development opportunities between county extension directors and non-county extension directors, Florida, 2006.

Group	n	Mean	S.D.	t
CED	38	2.890	.658	1.969*
Non-CED	163	2.614	.803	

* P≤.05

The researcher performed an ANOVA to compare mean responses to questions regarding respondents interest in professional development opportunities by time spent with their current county. The ANOVA showed that there was evidence of a statistically significant difference between means (P=.001; α=.05). The Eta^2 demonstrated that 8.6% of the variation in Florida Extension agents' interest in professional development opportunities to participate in CFS-focused programs can be explained by the amount of time spent in their current county (Table 4-15). The researcher also performed a Duncan post hoc test to identify subset groups. The post hoc test revealed two homogenous subset groups at the .05 level. The test showed that the respondents who reported their time with their current county as less than one year was the one group that was different from the others.

Table 4-15. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest levels in professional development opportunities by time spent in current county, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	4	10.581	2.645		4.620	.001
Within	196	112.232	.573			
Totals	200	122.813		.086		

The researcher also performed an ANOVA to compare mean responses to questions regarding personal interest in professional development opportunities among program foci. The ANOVA showed there was evidence of a significant difference between the

means (P=<.001; α=.05). The Eta^2 showed that program focus explained 16.2% of the variance in respondents' personal interest levels in professional development opportunities to participate in CFS-focused programs (Table 4-16). The researcher also performed the Duncan post hoc test to identify homogenous subset groups among program foci. The test revealed three separate subset groups. The first subset included those who reported their program focus as natural resources, urban horticulture, or Sea Grant. The second subset included those who reported their program focus as agriculture, urban horticulture, 4-H and youth development, or the 'other' category. Finally, the third category included those who reported their program focus as agriculture, family and consumer sciences, 4-H and youth development, or the 'other' category.

Table 4-16. One-way analysis variance of Florida Extension agents' mean responses indicating personal interest levels in professional development opportunities by program focus, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	6	19.898	3.316		6.251	<.001
Within	194	102.915	.530			
Totals	200	122.813		.162		

Time for participation in community food security-focused programs

The researcher performed an ANOVA to compare mean responses to questions regarding personal interest in receiving time to participate in CFS-focused programs among the different program foci. The test revealed evidence of a significant difference (P=<.001; α=.05). The researcher then calculated Eta^2 which showed that program focus explained 14.6% of the variance in personal interest levels in receiving time to participate in CFS-focused programs (Table 4-17). The Duncan post hoc test revealed four homogenous subset groups among program foci at the .05 level. The first group included

those who reported their program focus as natural resources or Sea Grant. The second subset included those who reported their program focus as urban horticulture or Sea Grant. The third subset included those who reported their program focus as agriculture, urban horticulture, 4-H and youth development, or the 'other' category. Finally, the fourth subset consisted of those who reported their program focus as agriculture, family and consumer sciences, 4-H and youth development, or the 'other' category.

Table 4-17. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest in receiving time to participate in community food security-focused programs by program focus, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	6	18.103	3.017		5.522	<.001
Within	194	105.992	.546			
Totals	200	124.095		.146		

The researcher used an ANOVA to compare mean responses to questions regarding receiving time to participate in CFS-focused programs by time spent in the respondents' current counties. The test showed that there was evidence of a significant difference among the groups who identified different amounts of time spent working in their current counties (P=.019; α=.05). The Eta^2 showed that the amount of time spent with their current county explained 5.8% of the variance in respondents' personal interest in receiving time to participate in CFS-focused programs (Table 4-18). The researcher used the Duncan post hoc test to identify homogeneous subsets in this ANOVA. The test revealed two homogenous subsets. The first homogenous subset consisted of those who reported their time with their current county as less than one year and those who reported their time as 2-5 years. The second subset consisted of those who reported their time as 2-5 years and higher.

Table 4-18. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest levels in receiving time to participate in community food security-focused programs by time spent in current county, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	4	7.173	1.793		3.006	.019
Within	196	116.922	.597			
Totals	200	124.095		.058		

Financial support for participating in community food security-focused programs

The researcher conducted a t-test to determine differences in mean responses to questions regarding personal interest in receiving financial support for participation in CFS-focused programs between respondents who indicated they were CEDs and respondents who indicated that they were not CEDs. The test revealed evidence that the means were statistically significantly different at the .05 level (Table 4-19). The test suggested that those who reported that they were CED's had higher means than did those who reported that they were not CEDs. In other words, the test evidenced that CEDs indicated higher levels of personal interest in receiving financial support for participation in CFS-focused programs than did non-CEDs.

Table 4-19. Comparison of Florida Extension agents' mean responses indicating personal interest levels in financial support for participation in community food security-focused programs between county extension directors and non-county extension directors, Florida, 2006.

Group	n	Mean	S.D.	t
CED	38	3.053	.813	2.701*
Non-CED	163	2.653	.824	

* $P \leq .05$

The researcher conducted an ANOVA to compare levels of personal interest in financial support for participating in CFS-focused programs among the different program focus groups. The ANOVA showed that there was evidence of a significant variance in

means (P=.001; α=.05). The Eta^2 showed that program focus explained 10.7% of the variance in levels of personal interest in financial support for participating in CFS-focused programs (Table 4-20). The Duncan post hoc test revealed three homogenous subset groups within program foci. The first subset consisted of those who reported their program focus as natural resources, urban horticulture, Sea Grant, or the 'other' category. The second subset consisted of those who reported their program focus as agriculture, urban horticulture, 4-H and youth development, or the 'other' category. The third subset included those who reported their program focus as agriculture, family and consumer sciences, 4-H and youth development, or the 'other' category.

Table 4-20. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest levels in financial support for participating in community food security-focused programs by program focus, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	6	14.947	2.941		3.884	.001
Within	194	124.422	.641			
Totals	200	139.368		.107		

The ANOVA between mean responses to questions regarding personal interest in financial support for participating in CFS-focused programs and the time spent in the respondents' current counties also revealed evidence of significance. This test evidenced statistically significant variance in mean responses (P=.012; α=.05). The Eta^2 showed that the amount of time spent in the respondents' current counties explained 6.3% of the variance in the respondents' interest in financial support for participation in CFS-focused programs (Table 4-21). In addition, the researcher conducted the Duncan post hoc test to identify homogenous subset groups in the test. The test showed two homogeneous subsets at the .05 level. The first subset included those who had reported the time spent with their current county as less than one year, and those who had reported the time spent

as two to five years. The second subset included those who had reported their time with their county as two to five years and higher.

Table 4-21. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest levels in financial support for participating in community food security-focused programs by time spent in current county, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	4	8.784	2.196		3.296	.012
Within	196	130.584	.666			
Totals	200	139.368		.063		

The availability of specialist support for participation in community food security-focused programs

The researcher used a t-test to identify the possibility of significant differences in the mean responses of CEDs and non-CEDs to questions regarding personal interest levels in having the availability of specialist support for participation in CFS-focused programs. The test provided evidence of a statistically significant difference between the two groups at the .05 level (Table 4-22). The direction of the test statistic suggested that CEDs have a higher mean than do non-CEDs. In other words, CEDs indicated higher levels of personal interest in the availability of specialist support for participation in CFS-focused programs.

Table 4-22. Comparison of Florida Extension agents' mean responses indicating personal interest in the availability of specialist support for participation in community food security-focused programs between county extension directors and non-county extension directors, Florida, 2006.

Group	n	Mean	S.D.	t
CED	38	3.063	.710	2.758*
Non-CED	163	2.663	.824	

* $P \leq .05$

An ANOVA test showed evidence of a significant difference in mean responses to questions regarding personal interest in the availability of specialist support for

participation in CFS-focused programs by amount of time spent in the respondents' counties. The test showed a significant difference (P=.002; α=.05). The Eta^2 showed that the amount of time spent in their current counties explained 8.2% of the variance in respondents' interest levels in the availability of specialist support (Table 4-23). The researcher performed a Duncan post hoc test which revealed that there were two subsets at the .05 level. Those who reported that they were with their current county for less than a year were different than all other categories.

Table 4-23. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest in the availability of specialist support for participation in community food security-focused programs by time spent with current county, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	4	10.878	2.720		4.358	.002
Within	196	122.581	.625			
Totals	200	133.460		.082		

The researcher performed an ANOVA to compare mean responses to questions regarding personal interest in the availability of specialist support for participation in CFS-focused programs among program foci. The test evidenced a significant difference between program foci at the .05 level (P=<.001). The researcher calculated the Eta^2 to show that program focus explained 13% of the variance in respondents' interest levels in the availability of specialist support (Table 4-24). The Duncan post hoc test revealed that there were three homogenous subsets at the .05 level. The first subset consisted of those who reported their program focus as natural resources, urban horticulture, or Sea Grant. The second subset consisted of those who reported their program focus as agriculture, urban horticulture, 4-H and youth development, or the 'other' category. The third subset

included those who reported their program focus as agriculture, family and consumer sciences, 4-H and youth development, and the 'other' category.

Table 4-24. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest in the availability of specialist support for participation in community food security-focused programs by program focus, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	6	17.290	2.882		4.812	<.001
Within	194	116.170	.599			
Totals	200	133.460		.130		

Acknowledgement in performance appraisals for participation in community food security-focused programs

An ANOVA evidenced a significant difference between mean responses to questions regarding personal interest in receiving acknowledgement in performance appraisals for participation in CFS-focused programs between program foci. The analysis found significance at the .05 level (P=<.001). The Eta^2 showed that program focus explained 15.5% of the variance in interest levels in acknowledgement in performance appraisals among respondents (Table 4-25). The researcher performed the Duncan post hoc test to identify homogeneous subsets. The post hoc test revealed three subsets at the .05 level.

Table 4-25. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest in receiving support through performance appraisals for participation in community food security-focused programs by program focus, Florida 2006.

Source	df	SS	MS	Eta^2	F	P
Between	6	20.635	3.439		5.918	<.001
Within	194	112.735	.581			
Totals	200	133.370		.155		

The researcher performed an ANOVA to compare mean responses to questions regarding personal interest in receiving acknowledgement in performance appraisals for

participating in CFS-focused programs by time spent with respondents' current counties. The analysis showed evidence of a significant difference among groups at the .05 level (P=.005). The Eta^2 showed that the amount of time respondents spent with their current county explains 7.3% of the variance in interest levels in acknowledgment through performance appraisals (Table 4-26). The Duncan post hoc test revealed two different homogenous subsets at the .05 level. The post hoc test demonstrated that those who reported being with their current county for less than one year made up the one group that was different from all the others.

Table 4-26. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest in receiving support through performance appraisals for participation in community food security-focused programs by time spent with current county, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	4	9.737	2.434		3.859	.005
Within	196	123.632	.631			
Totals	200	133.370		.073		

The availability of an established curriculum for community food security-focused programs

The researcher used a t-test to compare mean responses to questions regarding levels of personal interest in the availability of an established curriculum for CFS-focused programs between males and females. The test showed evidence of a statistically significant difference in means at the .05 level (Table 4-27). Specifically, the direction of the test statistic suggests that female respondents' interest levels in an established curriculum are higher than those of male respondents.

The researcher performed an ANOVA to compare mean responses to questions regarding levels of personal interest in the availability of an established curriculum by time spent with the respondents' current counties. The ANOVA provided evidence of a

statistically significant difference among means at the .05 level (P=.005). The researcher then calculated the Eta^2 to show that the amount of time spent with their current county explained 7.3% of the variance in personal interest in the availability of an established curriculum (Table 4-28). The Duncan post hoc test revealed two homogenous subsets at the .05 level. The respondents who reported their time with their current county as less than one year were in one group. All of the other respondents' program foci fell into another homogenous subset.

Table 4-27. Comparison of Florida Extension agents' mean responses indicating personal interest in the availability of an established curriculum for community food security-focused programs between male and female respondents, Florida, 2006.

Gender	n	Mean	S.D.	t
Male	68	2.591	.812	-2.047*
Female	133	2.846	.849	

* P≤.05

Table 4-28. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest in the availability of an established curriculum for community food security-focused programs by time spent with current county, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	4	10.384	2.596		3.854	.005
Within	196	132.018	.674			
Totals	200	142.402		.073		

An ANOVA provided evidence of a statistically significant difference in mean responses to questions regarding personal interest in an established curriculum for CFS-focused programs among program foci. The analysis showed evidence of significance at the .05 level (P=<.001). The researcher calculated Eta^2 to show that program focus explained 14.4% of the variance in respondents' interest levels in an established curriculum (Table 4-29). The researcher also used the Duncan post hoc test to identify

homogenous subsets among program foci. The test revealed four subsets at the .05 level. The first subset consisted of respondents who indicated their program focus as natural resources, urban horticulture, or Sea Grant. The second subset included those respondents who indicated their program focus was natural resources, urban horticulture, or the 'other' category. The third subset included respondents with a program focus of agriculture, 4-H and youth development, urban horticulture, and the 'other' category. The fourth subset consisted of the agriculture, 4-H and youth development, family and consumer sciences, and the 'other' categories.

Table 4-29. One-way analysis of variance of Florida Extension agents' mean responses indicating personal interest in the availability of an established curriculum for community food security-focused programs by program focus, Florida, 2006.

Source	df	SS	MS	Eta^2	F	P
Between	6	20.523	3.421		5.445	<.001
Within	194	121.878	.628			
Totals	200	142.402		.144		

Objective 5: To Identify and Describe Florida Extension Agents' Current Levels Participation in Community Food Security-Focused Programs

The questionnaire prompted respondents to indicate in what kind of CFS-focused programs, if any, they had participated in the last year. This was a "select all that apply" question with eight answer options. These options were: food access, food safety, nutrition, sustainable agriculture, local food systems, cultural aspects of the food system, social justice, and none of the above. The researcher analyzed the participation levels by overall population and demographic characteristics in Table 4-30. In each group, the largest percentages of respondents indicating participation fell in the food access, food safety, nutrition, sustainable agriculture, or the 'none of the above' categories. No groups

had a substantial percentage in the local food systems, cultural aspects of the food system, or the social justice categories.

The researcher performed a chi-square statistical significance test to determine the probability that the demographic variables identified in this study were unrelated to participation in the different kinds of CFS-focused programs. The researcher deemed the test appropriate because the responses were drawn from a census population and the respondents numbered more than one hundred. The researcher determined significance by checking the critical values of chi-square at the .05 level. Table 4-31 shows chi-square tests that resulted in evidence that the included variables were dependent. With the exception of participation in programs that address cultural aspects of the food system, all of the tests for program focus were found to have strong evidence against there being no association.

Objective 6: To Identify and Describe Associations Between Dependent Variables

The researcher used two methods to identify associations between the measured dependent variables in this study. The first method was a correlation table. The researcher used this to identify correlations between dependent variables in the study (Table 4-32). The Pearson correlation coefficient calculated for the association between respondents' knowledge scores and other scores and means showed weak evidence that there was a positive linear relationship between the variables. The Pearson correlation coefficient did not provide any evidence of a linear relationship between respondents' Likert summated scale scores and other variables with the exception of respondents' relevance means.

Table 4-30. Florida Extension agents' current participation in community food security-focused programs, Florida, 2006.

Group	n	Food Access		Food Safety		Nutrition		Sustainable Agriculture		Local Food Systems		Cultural Aspects		Social Justice		None	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Overall Population	201	17	8.5	67	33.3	69	34.3	6	27.9	22	10.9	11	5.5	6	3.0	82	40.8
Gender																	
Male	68	5	7.4	15	22.1	7	10.3	30	44.1	7	10.3	2	2.9	3	4.4	30	44.1
Female	133	12	9.0	52	39.1	62	46.6	26	19.5	15	11.3	9	6.8	3	2.3	52	39.1
Rank																	
Agent I	67	0	0.0	14	20.9	15	22.4	10	14.9	7	10.4	1	1.5	0	0.0	41	61.2
Agent II	47	5	10.6	15	31.9	18	38.3	12	25.5	3	6.4	2	4.3	3	6.4	19	40.4
Agent III	27	1	3.7	11	40.7	13	48.1	6	22.2	3	11.1	2	7.4	1	3.7	9	33.3
Agent IV	55	10	18.2	24	43.6	20	36.4	23	41.8	7	12.7	5	9.1	2	3.6	13	23.6
Other	5	1	20.0	3	60.0	3	60.0	5	100.00	2	40.0	1	20.0	0	0.0	0	0.0
CED																	
Yes	38	8	21.1	17	44.7	18	47.4	18	47.4	6	15.8	6	15.8	2	5.3	10	26.3
No	163	9	5.5	50	30.7	51	31.3	38	23.3	16	9.8	5	3.1	4	2.5	72	44.2
Time in County																	
< 1 year	23	1	4.3	5	21.7	8	34.8	6	26.1	4	17.4	0	0.0	0	0.0	12	52.2
2-5 yrs	74	5	6.8	24	32.4	27	36.5	20	27.0	9	12.2	5	6.8	2	2.7	29	39.2
6-10 yrs	42	1	2.4	10	23.8	12	28.6	7	16.7	1	2.4	0	0.0	1	2.4	22	52.4

Table 4-30. Continued.

Group	n	Food Access		Food Safety		Nutrition		Sustainable Agriculture		Local Food Systems		Cultural Aspects		Social Justice		None	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
11-15 ys	13	1	7.7	3	23.1	3	23.1	2	15.4	1	7.7	0	0.0	1	7.7	7	53.8
> 15 yrs	49	9	18.4	25	51.0	19	38.8	21	42.9	7	14.3	6	12.2	2	4.1	12	24.5
Program Focus																	
Ag.	57	4	7.0	18	31.6	6	10.5	33	57.9	11	19.3	2	3.5	0	0.0	17	29.8
Nat. res.	5	0	0.0	0	0.0	0	0.0	1	20.0	0	0.0	0	0.0	2	40.0	3	60.0
Ur. Hort	31	1	3.2	0	0.0	2	6.5	5	16.1	2	6.5	0	0.0	0	0.0	26	83.9
FCS	44	8	18.2	32	72.7	37	84.1	7	15.9	6	13.6	7	15.9	1	2.3	5	11.4
4-H	40	2	5.0	13	32.5	18	45.0	4	10.0	6	13.6	2	5.0	3	7.5	18	45.0
Seagrant	9	8	88.9	2	22.2	1	11.1	2	22.2	1	2.5	0	0.0	0	0.0	5	55.6
Other	15	14	93.3	2	13.3	5	33.3	4	26.7	1	11.1	0	0.0	0	0.0	8	53.3
District																	
N.W.	39	5	12.8	14	35.9	17	43.6	13	33.3	4	10.3	1	2.6	1	2.6	13	33.3
N.E.	39	3	7.7	15	38.5	17	43.6	12	30.8	6	15.4	4	10.3	1	2.6	14	35.9
Central	45	4	8.9	17	37.8	15	33.3	11	24.4	5	11.1	4	8.9	3	6.7	19	42.2
S. Cent.	44	3	6.8	11	25.0	13	29.5	11	25.0	4	9.1	1	2.3	0	0.0	20	45.5
South	28	0	0.0	8	28.6	6	21.4	5	17.9	2	7.1	1	3.6	1	3.6	15	53.6
>1 Dist.	6	2	33.3	2	33.3	1	16.7	4	66.7	1	16.7	0	0.0	0	0.0	1	16.7

Table 4-31. Association between Florida Extension agents' characteristics and participation in community food security-focused programs, Florida, 2006.

Independent Variable	Program Participation	Pearson Chi-Square Statistic	df	Asymp. Significance (2-sided)
Gender				
	Food Safety	5.878	1	.015
	Nutrition	26.332	1	<.001
	Sustainable Ag.	13.513	1	<.001
Rank				
	Food Access	14.845	4	.005
	Food Safety	9.601	4	.048
	Sustainable Ag.	24.409	4	<.001
	None	22.318	4	<.001
CED				
	Food Access	9.601	1	.002
	Sustainable Ag.	8.872	1	.003
	Cultural Food	9.641	1	.002
	None	4.068	1	.044
Time Spent with Current County				
	Food Safety	10.646	4	.031
	None	9.957	4	.041
Program Focus				
	Food Safety	52.019	6	<.001
	Nutrition	80.134	6	<.001
	Sustainable Ag.	37.488	6	<.001
	Cultural Food	13.180	6	.040
	Social Justice	29.994	6	<.001
	None	45.280	6	<.001

The Pearson correlation showed weak evidence of a negative relationship between the two variables at the .05 level (P=.011). All other variables had strong positive linear relationships with each other. These variables all had Pearson correlation coefficients that were found to be significant at the .001 level. These variables were:

- Respondents' indication of the level of relevance of CFS issues in their counties
- Respondents' perceptions of current levels of organizational support for participation in CFS-focused programs

- Respondents' personal interest levels in professional development opportunities for participation in CFS-focused programs
- Respondents' personal interest levels in receiving time to participate in CFS-focused programs
- Respondents' personal interest levels in financial support for participation in CFS-focused programs
- Respondents' personal interest levels in the availability of specialist support for participation in CFS-focused programs
- Respondents' personal interest levels in acknowledgement in performance appraisals for participation in CFS-focused programs
- Respondents' personal interest levels in the availability of an established curriculum for CFS-focused programs

The researcher used independent t-tests as the second method of determining associations relevant to the dependent variables measured in this study. The researcher used the t-tests to compare mean responses and mean scores between the participants and non-participants of the different CFS-focused programs. The t-tests revealed evidence (α=.05) that participation in educational programs that focused on nutrition had a positive relationship with all variables with the exception of the Likert summated score. The t-test for that variable showed evidence that participation in nutrition programs had a negative relationship with respondents' Likert summated scores. The tests also provided evidence (α=.05) that participation in food access, food safety, and local systems had positive relationships with respondents' perceptions of the relevance of CFS issues in their counties, their perceptions of current organizational support levels for participation in CFS-focused programs, and their personal interest levels in all six dimensions of organizational support (α=.05). Finally, the tests revealed evidence that non-participation in any of the CFS-focused programs had a negative relationship with respondents' perceptions of current levels of organizational support and with interest levels in all six

dimensions of organizational support (α=.05). None of the t-tests revealed evidence of a relationship with participation in programs that focused on sustainable agriculture.

Summary

The goals of this study were: (a) to identify and describe the knowledge levels and perceptions of Florida Extension agents regarding community food security, (b) to identify current levels of organizational support for extension agent participation in community food security-focused programs, and (c) to identify current participation in these types of programs. The researcher conducted this study in order to identify possible programming needs for Florida Extension agents and to identify possible areas for collaboration between Florida Extension and other organizations. In doing this, the study identified how extension agents perceived CFS in their respective counties. The study also served to identify how Florida Extension agents' perceive current organizational support levels for participation in CFS-focused programs. The study then described respondents' levels of interest in receiving different dimensions of organizational support for participation in CFS-focused programs. Finally, the study identified levels of current participation in these types of programs.

The researcher used basic descriptive statistics to describe the population for this study, their knowledge levels regarding CFS, and their perceptions of CFS in their counties. The researcher then identified relationships, associations, and correlations between groups and dependent variables by utilizing one-way analyses of variance, independent t-tests, chi-square tests, and calculation of Pearson correlation coefficients. These procedures provided a description of Florida Extension agents and their knowledge, perceptions, and relationships with CFS. The next chapter will provide the

researchers' conclusions for each of the six objectives for this study and will include discussion and implications.

Table 4-32. Pearson correlation table for Florida Extension agents' dependent variables (M = Mean, S = Score), Florida, 2006.

	Know. S.	Likert S.	Relevan. M.	Support M.	Prof. Dev. M.	Time M.	Financial M.	Specialist M.	Appraisal M.	Curric. M.
Know. S.	---		.185**	.049	.144*	.151*	.144*	.157*	.155*	.154*
Likert S.		---	-.178*	.016	.005	-.019	-.003	-.172	-.015	-.021
Relevan. M.			---	.475***	.378***	.412***	.353***	.372***	.370***	.360***
Support M.				---	.440***	.443***	.440***	.436***	.404***	.421***
Prof.Dev. M.					---	.911***	.905***	.883***	.844***	.886***
Time M.						---	.921***	.881***	.874***	.873***
Financial M.							---	.859***	.815***	.874***
Specialist M.								---	.805***	.857***
Appraisal M.									---	.842***
Curric. M.										---

* P≤.05 **P≤.01 ***P=<.001

CHAPTER 5
SUMMARY AND CONCLUSIONS

Introduction

This chapter presents conclusions for each of the six objectives for this study. This chapter also provides discussion on the results and conclusions. The chapter will begin by offering a brief overview of the study's objectives and methodology. Discussion and conclusions will follow each objective. In addition, this chapter will include the implications of this study. Finally, this chapter will list the researcher's recommendations to extension for future programming efforts as well as future research needs on this topic.

Objectives of the Study

The overarching goal of this study was to identify and describe the knowledge levels and perceptions of Florida Extension agents regarding community food security. A secondary goal was to identify (a) current levels of organizational support for extension agent participation in community food security-focused programs, and (b) current participation in these types of programs. The researcher developed the following objectives to accomplish these goals:

- Objective 1: To identify Florida Extension agents' levels of knowledge regarding community food security
    - Objective 1a: To describe Florida Extension agents' levels of knowledge regarding community food security
    - Objective 1b: To compare knowledge levels among groups of Florida Extension agents based on demographic characteristics

- Objective 2: To identify Florida Extension agents' perceptions of community food security in their respective counties
    - Objective 2a: To describe Florida Extension agent's perceptions of community food security in their respective counties
    - Objective 2b: To compare Florida Extension agents' perceptions of community food security based on demographic characteristics
- Objective 3: To identify Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs
    - Objective 3a: To describe Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs
    - Objective 3b: To compare Florida Extension agents' perceptions of organizational levels of support for participation in community food security-focused programs
- Objective 4: To identify Florida Extension agents' levels of interest in receiving different dimensions of organizational support for participation in community food security-focused programs
    - Objective 4a: To describe Florida Extension agents' levels of interest in receiving different dimensions of organizational support for participation in community food security-focused programs
    - Objective 4b: To compare Florida Extension agents' interest levels in organizational dimensions of support based on demographic characteristics
- Objective 5: To identify and describe Florida Extension agents' current levels of participation in community food security-focused programs
- Objective 6: To identify and describe associations between dependent variables

Methodology

The study focused on identifying Florida Extension agents' levels of knowledge of CFS as well as variables that are pertinent to the theory of planned behavior. These variables included intention to perform a behavior (interpreted as interest in receiving support for participating in CFS-focused programs), attitude toward a behavior (interpreted as their perceptions of CFS), and their perceived social control over a

behavior (interpreted as their perceptions of current organizational support). The researcher collected data through the use of a web-based, quantitative survey instrument. The data provided findings that suggested common themes that reoccur throughout the results.

General Discussion and Conclusions

Objective 1: General Discussion and Conclusions Regarding Florida Extension Agents' Knowledge Levels Regarding Community Food Security

The calculated knowledge scores provided insight into Florida Extension agents' levels of knowledge regarding CFS. The overall score range indicated that no respondents answered all questions incorrectly. Likewise, no respondents answered all questions completely correctly. It is possible that the correct answers to some of the knowledge-based questions were easy to guess, even if the respondent had no knowledge whatsoever regarding CFS. The lowest score achieved was one point, indicating that the respondents answered only one knowledge-based question correctly. The highest scorers had 17 points, indicating the respondents failed to achieve two of the possible points. These scores indicate that the population of Florida Extension agents has a wide range of knowledge levels regarding CFS. Thompson et al. (2003) found that extension agents in Pennsylvania felt that lack of knowledge was one of the top three barriers to participating in local food systems-focused programs. It is possible that lack of knowledge is a considerable barrier to Florida Extension agents' participation in programs that focus on CFS.

The results showed that respondents' reported extension district accounted for 10.6% of the variance in knowledge scores among Florida Extension agents. This is similar to the findings of Thomson et al. (2003). They found that there were significant

differences in extension agent responses and perceptions based on their extension region. It is possible that extension agents in different districts receive diverse levels of educational training regarding CFS or concepts related to CFS. It is also possible that the difference in training or education relates to the existing needs in a specific county. For example, the Duncan post hoc test indicated that the means of respondents in the South Central district differed from the means of respondents in the Northeast district. It is possible that the needs of the clientele in the two districts differ. Thus, the extension agent group from one district may receive training, education, and experience with CFS and CFS-related concepts, while the extension agents in the other district may not. As mentioned in Chapter Two, extension agents are responsible for identifying the needs of the clientele in their region or county and allocating resources to most effectively address those needs (Seevers et al., 1997).

The results of an ANOVA also suggested that the amount of time the respondents had spent with their current county explained 9.1% of the variance in their knowledge score means. The researcher expected to find that those who spent less time in their county would be in one homogenous subset, while those who had spent more time in their county would be in another. However, in both subsets, the respondents who had spent less than one year with their current county were found to be homogenous with those who had spent more than fifteen years with their current county. It is possible that extension agents who have been with their county for different amounts of time are receiving different types of support, training, or having different types of experiences that would have an effect on their knowledge of CFS. It is also possible the state of CFS issues in an extension agent's county has a relationship with their knowledge of CFS.

For example, if there are prominent CFS-related problems within an extension agent's county such as nutrition problems, hunger, or lack of sustainability the extension agent may have more knowledge of CFS.

Objective 2: General Discussion and Conclusions Regarding Florida Extension Agents' Perceptions of Community Food Security in Their Counties

This objective had two components: a Likert scale and a relevance index. The researcher constructed the Likert scale for the purpose of measuring respondents' perceptions of CFS in their counties. The researcher began by including all seven established and essential components of CFS. The process of developing the scale indicated that two components (social justice and cultural aspects of the food system) be discarded. The resulting scale had a Cronbach's alpha of .545. This indicates that the scale does not have an adequate level of internal consistency. Further exploration revealed that the removal of four of the items would result in a Cronbach's alpha of .617. This would indicate slightly higher internal consistency, but still does not indicate the scale is measuring a single construct. The weakness of this scale could explain the failure of respondents' summated scale scores to correlate with other dependent variables. Some possible explanations for the weakness of this scale may be that statements or concepts were unclear or lending themselves to multiple interpretations. It is possible that the constructs within the scale are not collectively related, but have relational patterns that are not illustrated in this scale.

The Likert scale was useful in this study in that it revealed respondents' perceptions of CFS in their counties. These perceptions were not extremely negative nor were they not extremely positive. Respondents were presented with statements such as 'very few people are knowledgeable about food safety' and 'the majority of people in my county

are knowledgeable about good nutrition.' Once the researcher recoded the responses to reflect positive attitudes regarding CFS, the range of summated scale scores was 13 for an extremely negative attitude and 65 for an extremely positive attitude. All respondents received scores between 24 and 48. One can interpret this overall score range in two ways. This range may reflect that Florida Extension agents do not feel strongly one way or the other regarding CFS in their counties. The second interpretation is that the CFS issues in Florida counties, while not dire, indicate a need for programming. Finally, the scores also indicate that some CFS issues are important in some areas while not in others. Thomson et al. (2003) found that extension agents must find issues important or salient before they will want support for participation in programming that addresses these issues. In this case, some extension agents indicated that they felt CFS issues were important or salient in their counties while others did not. This finding directly connects to the attitude toward behaviors referenced in the theory of planned behavior (Ajzen, 1991).

The overall results of the Likert scale indicate that more information is needed in order to draw conclusions about the relationship between the actual status of CFS in Florida and Florida Extension agents' perceptions of CFS. Extension agents' perceptions may or may not accurately reflect the actual CFS issues in their counties. In this way, the Community Food Security Assessment Toolkit (Cohen, 2002) would be a useful tool. A researcher could assess CFS issues in a community using an instrument and compare the findings of the assessment with the perceptions of extension agents who work in the community. In doing this, the researcher would have to refer back to the geographic definitions of community (Hirst, 1980; Flora, 1998; Galster, 2001; Rubin & Rubin, 2001;

Martin, 2003). It is possible that the concept of CFS cannot be applied to so large a region as an extension district or state, but rather should be applied to neighborhoods or small geographic communities. The Likert scale used in this study may be more useful in this context.

The researcher used a second method to identify Florida Extension agents' perceptions of CFS in their counties. The researcher used a mean response to questions asking about the relevance of CFS-related issues to the respondents' counties. The researcher decided to do this for data reduction purposes. Although data reduction lessens the precision of measurement, the researcher decided this method was acceptable due to time and resource restrictions for this study. The mean responses indicated that, overall, respondents felt that CFS was moderately relevant in their respective counties (mean=3.053). This could indicate that extension agents feel that extension educational programs that address CFS issues in their counties are useful and needed. This is similar to the results of the Thomson et al. (2003) study. They found that extension educators thought local food systems issues were important enough to warrant extension programming.

Tests revealed evidence that females had lower mean summated scale scores than did males. There was also evidence that females had higher means for questions regarding the relevance of CFS-related issues in their counties. In other words, female respondents saw CFS-related issues more negatively than did male respondents. The researcher interpreted these results to indicate that female Florida Extension agents perceived CFS issues as more salient in their counties. Upon reflection of these results, the researcher constructed an additional hypothesis that drew on the suppositions made

based on the results of the knowledge test. The researcher proposed that program focus may be directly or indirectly associated with extension agents' knowledge levels and perceptions of CFS in their counties. If extension agents have more training or professional experience involving CFS or CFS-related issues, they may be more knowledgeable about the concepts inherent to CFS as well as being more aware of CFS-related problems in their counties.

Thus, there are two ways to interpret the difference between females' and males' perspectives on CFS. The first interpretation is that females are different than males and have different experiences. This concept could account for females' more negatively skewed perceptions. The second interpretation is that program focus (and, hence, professional training and experience) is a major determinant of perceptions of CFS. If more females have program foci that directly address CFS-related issues such as nutrition, hunger, and food safety, they may naturally have more experience and awareness of CFS issues within their county. The researcher constructed a bar chart to visually depict this interpretation (Figure 5-1).

Research has shown a gender bias in extension employment positions. Seevers and Foster (2004) noted that women in agricultural or extension positions are seen as minority populations. The researcher listed several barriers that female extension educators had experienced in their careers (Seevers & Foster, 2004). The data in the current study suggest that women in extension work in program foci that have a more traditional feminine focus, such as family and consumer sciences or 4-H.

The researcher found that the distribution of gender was not equal across areas of program focus. In addition, the researcher performed an ANOVA which illustrated that

program focus explained only 7% of the variance in means in respondents' summated scale scores. There may be unknown associations between gender, program focus, and extension agents' knowledge and perceptions of CFS.

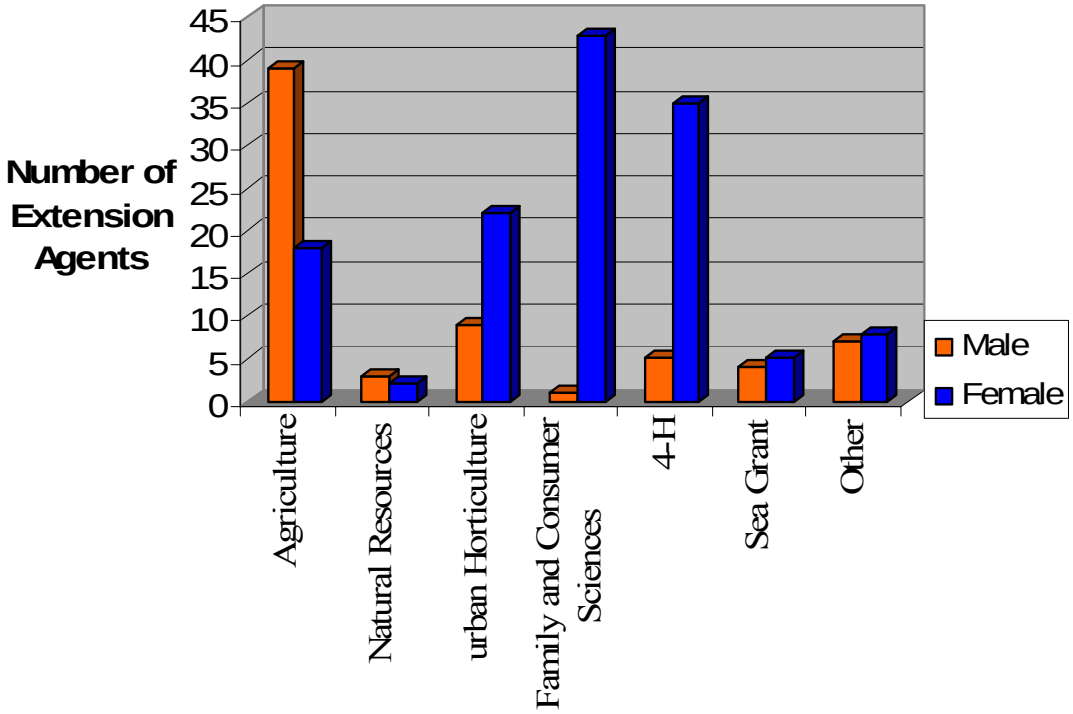

Figure 5-1 Distribution of Florida Extension agents across program focus by gender, Florida, 2006.

Objective 3: General Discussion and Conclusions Regarding Florida Extension Agents' Perceptions of Organizational Support Levels for Participation in Community Food Security-Focused Programs

The questionnaire prompted respondents to indicate the levels of organizational support they were currently receiving for participation in programs that focused on each of the five included components of CFS. The researcher performed a data reduction procedure similar to the one performed with the relevance questions. Instead of examining support for each program type, the researcher reduced the data by calculating a mean response for each respondent. The researcher deemed this procedure appropriate due to time and resource constraints. The respondents had a response scale of one to

four, where one indicated *no support* and four indicated *a great deal of support*. The overall population of Florida Extension agents had a mean of 2.67 for current support for participation in CFS-focused programs. This mean indicates moderate levels of support. However, when the researcher examined the means of individual demographic groups, the means revealed levels of support were biased toward one side of the scale or the other. The researcher made the supposition that the levels of support were strongly related to the needs of clientele in different communities, districts, and due to their involvement in the different extension program foci. However, the researcher noted a loss of precision inherent in the chosen data reduction procedure. This result is comparable to those in previous studies. Researchers found that extension agents did not feel as if they were receiving organizational or administrative support to engage in CFS-focused collaborations (Pelletier et al., 2002). In another study, Pelletier et al. (1999) found that administrators felt that they were giving extension agents adequate support to engage in CFS-focused activities. The respondents' perceptions in both previous studies, as in the current study, did not indicate a strong sense of either support or lack of support in this context.

To further explore the data, the researcher examined response means to questions regarding current organizational support among the characteristic groups of respondents. An ANOVA illustrated that respondents' program focus was the one characteristic that showed evidence of significant variance among means. This is a similar finding to those in the study by Thompson et al. (2003). They found that program focus was a significant indicator of organizational or administrative support for local food systems programming. The test showed that program focus accounted for 12.5% of the variance. The researcher

expected this result, as respondents' whose program focus involved CFS-related issues would receive more support to address those issues than would respondents whose program focus did not address CFS-related issues. The results supported this conclusion.

Objective 4: General Discussion and Conclusions Regarding Florida Extension Agents' Personal Interest in Receiving Dimensions of Organizational Support for Participation in Community Food Security-Focused Programs

Florida Extension agents indicated that they were moderately interested in receiving most dimensions of support for participation in CFS-focused programs. The overall mean responses ranged from 2.577 for interest in receiving additional time to 2.76 for interest in the availability of an established curriculum. The researcher derived these means from a scale of one to four, where one corresponded to *not interested* and four corresponded to *very interested*. The researcher reduced the data in a similar fashion to the questions regarding levels of organizational support. Rather than reporting interest in dimensions of support for participation in each type of CFS-focused program, the researcher calculated a mean for each dimension. The researcher decided this data reduction would prove efficient despite the diminution of precision.

The higher interest in an established curriculum is similar to the findings of the LaBorde (2003) study. The researcher found that extension agents in Pennsylvania wanted support for food safety programs that was easy to access and understand. In their study, extension specialists provided the support through an informational web site. This type of support is similar to an available curriculum in that extension agents are not required to prepare or research too much information in order to deliver an educational program in this context. LaBorde (2003) also found that extension agents wanted the availability of a specialist to support their participation in food safety programs. This is

similar to the findings of the current study. Florida Extension agents reported a mean level of interest in specialist support of 2.74.

The researcher examined each of the six dimensions of organizational support in terms of the demographic groups in this study. There were several demographic groups that showed evidence of significant associations in levels of interest in the different types of organizational support. Specifically, the groups included CEDs versus non-CEDs, program foci, and the amount of time spent with respondents' current counties.

A series of t-tests revealed evidence that CEDs indicated higher interest levels in several dimensions of organizational support than did non-CEDs. First, the researcher found evidence that CEDs were more interested in receiving professional development opportunities for participation in CFS-focused programs than were non-CEDs. There are several ways to interpret this result. CEDs may be more aware of their county's needs. As mentioned in Chapter Two, CEDs are responsible for providing leadership in their county's extension system and for managing all programming within their county (UF/IFAS, 2005). As a result of this leadership position, CEDs may have experience or knowledge of CFS issues in their counties that other extension agents may not have. These factors could lead to a greater awareness, and thus, more interest in pursuing professional development opportunities that would help them or their extension agents respond to community CFS issues.

Respondents who work as CEDs may be a self-selecting population that are naturally more interested in professional development opportunities overall. In other words, CEDs may have more responsibility and may have participated in more professional development opportunities than have non-CEDs. The CEDs may be more

interested in or open to the possibility of professional development opportunities in any context than are extension agents in lower ranks. Another way to interpret this finding is that CEDs are more interested in acquiring this type of organizational support to learn more about CFS. This would be similar to the findings in the Pelletier et al. (1999) study, where they concluded that extension administrators in New York were interested in supporting their extension agents in participating in CFS-related activities. In the current study, one might extrapolate that if CEDs learn more about CFS or participate in more CFS-focused activities as a result of receiving additional organizational support, they may encourage their extension agents to learn more about the topic as well.

The researcher examined CEDs in the context of interest in receiving financial support and the availability of specialist support to participate in CFS-focused programs. A t-test revealed evidence that CEDs indicated more interest in receiving both of these types of financial support than did non-CEDs. This supports previous evidence that CEDs may be more inclined to pursue additional programming or professional opportunities than do non-CEDs. There may also be other differences between CEDs and non-CEDs that could have an effect on their levels of interest in receiving these types of support.

The amount of time the respondents had spent in their current county showed associations in several dimensions of organizational support. An ANOVA revealed evidence that there is a relationship between the amount of time an extension agent has spent in their county and their level of interest in receiving professional development opportunities for participation in CFS-focused programs. The test revealed that time spent with their current counties explained 8.6% of the variance in respondents' interest

levels in professional development opportunities in this context. If one were to extrapolate from these results using the results of the CED t-test, it may be possible that those who have spent more time with their county are more interested in learning opportunities. CEDs are likely to have spent more time with their current county than respondents who have Agent I or II ranks. In this way, it may be that the respondents who have spent more time in their county, regardless of rank, may be more open to or interested in professional development opportunities of this type.

The amount of time spent in the respondents' current counties explained 5.8% of the variance in interest in receiving more time to participate in these programs and 6.3% of the variance in interest in receiving financial support for participation. Although, again this variable does not explain a substantial amount of variance, the post hoc tests revealed subsets that are found in several of the dependent variable categories, and is therefore worth noting. The post hoc test for interest in receiving more time reveals that the respondents who have spent less than one year or between two and five years are in one subset while all other time frame categories are in a separate subset. The post hoc test for interest in receiving financial support reveals that those who have spent less than one year with their current counties are different than all other groups.

An ANOVA revealed evidence that this variable showed variance in interest in the availability of specialist support among respondents. The researcher showed that the amount of time spent in respondents' current counties explained 8.2% of the variance in interest in this dimension of organizational support. The post hoc test was congruent with the tests run in the context of the other variables in that it showed that those who have been with their current county for less than one year were different than all other

groups. Tests produced similar evidence for this demographic category in terms of both interest in receiving acknowledgement through performance appraisals and interest in an established curriculum for participating in CFS-focused programs.

Respondents who have been with their current county have been in one subset while all other time frame categories are in another subset. This may suggest that the respondents who have been with their current county for less than one year differ from all other extension agents in their interest in receiving the different dimensions of organizational support. It is possible that the extension agents who have been with their counties for less than one year may be less interested in receiving organizational support to engage in additional activities because they are already engaged in orientation and basic tasks within their county. It may also be possible that extension agents who have spent more time in their current counties are more available for additional programs, types of support, or activities than those who are still establishing themselves within their county.

The researcher explored the association between levels of interest in the different dimensions of organizational support to participate in CFS-focused programs and program focus. As expected, the tests showed evidence of significant variation in interest levels among the different program foci. As mentioned earlier, this finding corresponds with the study that found Pennsylvania Extension agents showed variations of interest in engaging in local food systems programming based on their area of expertise (Thomson et al., 2003). An ANOVA showed evidence of variation in interest levels in professional development opportunities among the program foci. The test showed that program focus explained 16.2% of the variance in interest in this type of support. The homogenous

subgroups revealed by the post hoc test support the researcher' supposition that respondents that work in programs that already deal with CFS issues will be more interested in this type of organizational support. While those who reported natural resources, Sea Grant, and urban horticulture were in one subgroup, another subgroup consisted of those in agriculture, family and consumer sciences, and 4-H and youth development.

Each of these programs is different in their focus. Extension describes the Florida 4-H program as focusing on "the development of youth as individuals and as responsible and productive citizens" (UF/IFAS, n.d. a) through methods such as organized clubs, groups, and activities. Alachua Extension describes their Family and Consumer Sciences program as focusing on topics such as nutrition, food safety, and financial management (UF/IFAS, n.d. b). Florida Sea Grant programming focuses on "enhancing the practical use and conservation of coastal and marine resources for a sustainable economy and environment." One can clearly see the differences in program foci such as these. However, as mentioned in Chapter Two, USDA-CSREES supports both multidisciplinary programs and extension partnerships with outside organizations to most effectively meet the needs of the clientele (CSREES, 2005a). Minarovic and Mueller (2000) found that extension agents were interested in working with extension agents in other disciplines. As mentioned in Chapter One, both participation and the empowerment of community members are primary goals in extension's endeavors (Seevers et al., 1997). In this way, the researcher draws from the results of the current study to suggest that interdisciplinary collaborations may enhance Florida Extension's ability to address CFS needs on a county or local level. Extension must be able to motivate agents of all types to be interested in

receiving support for participation in CFS-focused programs n order to facilitate this type of collaboration.

The researcher also examined the demographic groups in terms of their interest levels in receiving time to participate in CFS-focused programs. Again, the researcher hypothesized that program focus would be associated with interest in all types of organizational support. An ANOVA provided evidence of this in terms of receiving time. In this case, program focus explained 14.6% of the variance in interest levels in receiving this type of organizational support. The post hoc test revealed similar homogenous subsets among program foci as the post hoc test for professional development opportunities. This again supports the previous findings of Thomson et al. (2003).

An ANOVA revealed that program focus explained 10.7% of the variance in respondents' interest levels in receiving financial support to participate in CFS-focused programs. These results support the researcher's hypothesis that program focus plays a major role in determining interest in organizational support for participating in CFS-focused programs. The post hoc tests for this dimension of organizational support also provided a foundation for this supposition. The homogenous subsets consisted of those who do not address CFS issues in their program versus those who do.

Objective 5: General Discussion and Conclusions Regarding Florida Extension Agents' Current Levels of Participation in Community Food Security-Focused Programs

The researcher measured extension agents' recent (within the past year) participation in programs that dealt with any components of CFS. The findings suggest that overall, the largest percentage of extension agents in Florida have not participated in programs that deal with CFS. The researcher examined participation levels among the

demographic groups. The majority of respondents in the following categories had not recently participated in a CFS-focused program: respondents with Agent I rank, those who have been with their counties for less than one year, those who have been with their county for between 11 and 15 years, respondents with a program focus in natural resources, respondents with a program focus in urban horticulture, respondents with a focus in Sea Grant, and respondents in the South District. There was a measurement error with the respondents in the 'other' category for program focus. Several respondents in this category marked both that they had participated in a program and marked that they had not participated in a program.

These results support the researcher's hypothesis regarding levels of interest in dimensions of organizational support. The researcher suggested that those who were not as involved in programs addressing CFS issues would be less interested in receiving organizational support for participation in these types of programs. The groups that showed less interest or a difference in interest in receiving organizational support were also the groups that had the majority of respondents indicate that they had not participated in CFS-focused programs within the last year. The researcher performed chi-square tests to identify associations between the demographic groups and participation in these types of programs. Gender, rank, CED status, time spent in current county, and program focus all showed associations with participation in at least one of the program types. It is possible, and even likely, that participation in CFS-focused programs is affected or influenced by many different variables. Florida Extension must have a full understanding of the variables involved in order to effectively motivate extension agents to participate in these types of programs.

Objective 6: General Discussion and Conclusions Regarding the Associations between Dependent Variables in This Study

The results of this study indicated that several dependent variables were associated with one another. First, statistical tests showed evidence of a weak relationship between respondents' knowledge scores and all other dependent variable scores. In other words, as a respondent's knowledge score got higher, their indication of the relevance of CFS issues in their county got higher, as did their interest in receiving organizational support to participate in CFS-focused programs. These relationships were weak, which surprised the researcher. Originally, the researcher hypothesized that higher knowledge levels would have a strongly positive relationship with each of these variables. It is possible that knowledge by itself does not heavily influence perceptions of relevance or interest in participation. The results of this study suggest that it is possible that the extension agents' participation in CFS-focused programs has a stronger influence on their perceptions and their interest in future participation. In other words, if an extension agent engages in professional activities that focus on addressing CFS issues, they are more likely to perceive these as relevant issues.

Second, data analysis provided evidence that interest levels in all of the dimensions of organizational support were positively associated with one another. Thus, if a respondent was interested in one type of support they were likely to be interested in all types of support. This finding is logical and is not surprising. However, there may be types of organizational support not offered in this questionnaire that extension agents may or may not be interested in receiving. This finding is also similar to the findings of LaBorde (2003) and of Gentry-Van Laanen and Nies (1995) in that extension agents were

interested in multiple types of support for participation in programs that focus on a CFS context.

Finally, analysis showed evidence that the respondents who had participated in nutrition programs in the previous year had a significant positive relationship with all other variables with the exception of their Likert scores. Nutrition was the only program participation category that showed a significant positive relationship with each of the dependent variables. There were other program participation categories such as food access, food safety, and local food systems that had positive relationships with some of the dependent variables. This indicates the possibility that nutrition programs are different than other programs.

Nutrition programs have an obvious involvement with more than one of the dimensions of CFS. Greer and Poling (2002) found that people who participated in nutrition programs in Tennessee improved in hunger issues, food management, food choices, food safety, and cooking skills. Anding et al. (2001) found Texas Extension nutrition program to not only influence participants' food choices, knowledge of nutrition, and food management; it also reduced community impact of hunger and emergency food reserve depletion. These results, as well as those of the current study, support the researcher's supposition that program focus and previous involvement in CFS-focused programs have significant relationships with knowledge, perceptions, and interest in CFS. In this way, it is possible that if one were to increase extension agent participation in these types of programs or activities, it could lead to increased extension agent awareness and interest.

Overall Implications and Recommendations for Florida Extension

Community food security is an issue of concern in the United States. The Cooperative Extension Service offers programs such as the Expanded Food and Nutrition Program, The Family Living Program in Wisconsin, and the Better Living for Texans Program in Texas to identify and address local CFS issues. Extension offers web site support for extension agents in Pennsylvania who would like more information on CFS issues such as food safety. Edible Connections is a program in Pennsylvania that uses the promotion of local food production to deal with teen risk behaviors in the community. Extension services across the county are already engaged in addressing CFS issues in their community. The opportunity to build collaborations and inter-organizational partnerships between extension and other CFS organizations in the community is not only available, it is relevant and can help Florida Extension meet the needs and interests of its extension agents and its clientele.

Recommendations for Extension Partnerships

The results of this study suggest that some Florida Extension agents see CFS as a salient issue in their counties and are interested in receiving support to engage in programs that work to address these issues. As noted by Thomson et al. (2003), this is half the battle. They concluded that extension agents needed to incorporate their own perceptions of importance with the issues in their communities (Thomson et al., 2003). Florida Extension's responsibility is to allot resources and allow for opportunities so that extension agents can most effectively address clientele needs. As mentioned earlier, collaborations with outside nonprofit or other types of community organizations can be an excellent resource for addressing community issues, specifically in a CFS context.

There are many organizations in Florida that work to address CFS issues and community development. Farmers' markets, food banks, community gardens, and educational outreach organizations are just a few examples. Cooperative extension and extension educators work toward community development, citizen empowerment and education for community members so they can make informed decisions. Holland (2004) suggests that an integration of sustainability projects with community development efforts can facilitate both community participation and citizen empowerment. Gentry-Van Laanen and Nies (1995) provided an example of a CFS-focused extension education program that worked to supplement current community outreach efforts to address CFS issues in the community. Minarovic and Mueller (2000) determined that extension agents in North Carolina were interested in the involvement of local organizations and community members to enhance CFS-focused extension programming. Finally, the Community Food Security Initiative of 1999 encourages collaborations between government and nonprofit organizations (Thomson, et al., 2003).

Based on previous research and on the results of the current study, the researcher recommends that Florida Extension explore the possibilities for partnerships with local and community organizations in order to assist extension agents in effectively addressing CFS issues. In doing so, Florida Extension can function to not only address individual issues, but can also work to improve the condition of the community in which it serves. This would work like the example in the Anding et al. (2001) study. Hancock (2001) writes, "A healthy community is one that has high levels of social, ecological, human, and economic 'capital', the combination of which may be thought of as 'community capital.' (p. 275). Hancock (2001) goes on to suggest that collaborations on projects that

focus on sustainability and ecology, such as community gardens would work to strengthen the capital within a community. In this way, partnerships with Florida Extension could work not only to address CFS issues, but also strengthen economies, ecologies, and social capital in their counties.

Recommendations for Needs Assessments

Florida Extension agents do not perceive CFS in their counties very negatively, but neither do they perceive it as very positively. This indicates that while CFS issues are not an immediate problem in Florida, they are in need of concern and attention. Extension agents' responses to questions regarding the relevance of CFS issues in their counties also provide evidence that these issues are of concern. As established earlier, Florida Extension has direct involvement with the food systems in the state, in both the contexts of consumers and producers. The perceptions of Florida Extension agents indicate that there are issues in need of address in the state. Florida Extension can utilize needs assessments and asset assessments to aid extension agents in addressing these types of issues.

Needs assessments are one of the tools extension agents use to determine the needs, issues, and concerns within their counties and communities. The researcher suggests that extension agents in Florida conduct needs assessments in their communities. This would serve several purposes. First, the needs assessments would allow extension agents to gauge actual CFS needs or salient CFS issues in their counties. Second, the results of the needs assessments would allow researchers to compare extension agent perspectives on CFS issues with data regarding CFS in their communities. Third, the results of the needs assessments would help extension agents work toward IFAS' research mission: "to provide scientific knowledge and expertise to the public" (UF/IFAS, 2004, ¶ 12). The

needs assessments would also help extension agents direct CFS programming toward community members that need it the most. The results of the Fishman et al. (1999) study indicated that extension educators must not only be aware of the needs of their clientele, but must also be aware of their culture and background. In this way, a needs assessment would assist extension agents in utilizing their time and programming resources in the most effective way possible.

The needs assessments would allow extension agents to examine CFS in a geographical community or neighborhood. The Community Food Security Assessment Toolkit (Cohen, 2002) provides instruments such as questionnaires, interview guides, and directions for focus groups that would assist extension agents or other researchers in determining CFS needs within the community. The researchers would need to examine each of the seven components of CFS. For example, researchers would need to find out if community members were having a hard time getting to the grocery store, if there was a problem with spoiled or improperly cooked food in the community, if people were having a hard time getting culturally acceptable foods, or if workers in the food system were being treated properly by their employers.

Recommendations for Support

The results of this study showed that some extension agents in Florida were interested in receiving support for participation in CFS-focused programs. The researcher recommends that Florida Extension administration work to allot needed and wanted support for these agents. While there were six dimensions of support addressed in this study, there may be other methods of desired support such as web sites.

Florida Extension must examine who is interested in receiving what kinds of support and who is interested in participating in these types of programs to effectively

address these issues within their counties. This study revealed evidence that some program foci want organizational support for participation in CFS-focused programs more than others. Overall, extension agents are moderately interested in receiving organizational support for participation. Florida Extension can allot these types of support on a county-by-county basis, as needed. The decision to allot these types of support can also be based on needs assessments and county issues of salience. Florida Extension agents showed the most interest in the availability of a curriculum. The researcher recommends that Florida Extension make available a developed and available curriculum for extension agents interested in participating in CFS-focused programs.

The results of this study also indicated that CEDs may be more interested in receiving these types of support. If this is the case, Florida Extension can support their CEDs by making these types of support available to them. The CEDs act as leaders in their counties and, in doing so, set an example for other extension agents. If extension agents are motivated to engage in these types of programs by their CEDs, they may be more interested in participating.

Recommendations for Education and Motivation

The study showed that extension agents have a wide range of knowledge of CFS. While no one in the study answered every question in the knowledge test incorrectly, no one answered every question correctly. There were differences in knowledge across districts and by the amount of time the respondent had spent in their county. This implies that Florida Extension should look at the need for additional education or training in some areas. Florida Extension could offer additional education on CFS as a concept and on the different components of CFS.

The study revealed high levels of non-participation in CFS-focused programs. The results showed that more than 40% of all extension agents have not participated in a program that focuses on a CFS component in the last year. Florida Extension needs to identify reasons for non-participation. This may be as a result of program focus or community needs, lack of organizational support, or lack of interest in participation. Florida Extension must work to support their agents in participating in programs that address issues that are clearly of concern in the state. In addition to support, Florida Extension must also work to motivate their agents to address these issues within their counties. As stated above, the motivational process may involve engaging the CED for the county in garnering support for these programs. It is extension's responsibility to identify the needs of their clientele and appropriate resources in order to adequately address those needs.

Recommendations for Future Research

This study was a descriptive study and a primary step in examining Florida Extension in the context of community food security. The results of this study provide a platform for future research studies. The research gained insight into Florida Extension agents' knowledge, perceptions and behavior in terms of CFS, but each insight inevitably leads to more questions and further exploration. The research made the following recommendations for further research based on the findings and conclusions of this study.

- The researcher recommends that further research be conducted regarding extension agents' levels of knowledge regarding CFS. Specifically, the researcher recommends that research be done to identify the relationship between CFS issues in specific districts or counties within Florida and the knowledge levels of the extension agents within those extension regions. The Community Food Security Assessment Toolkit (Cohen, 2002) would be a useful tool in this type of endeavor. The assessment would help researchers to determine the state of CFS within a particular region. The knowledge scores of extension agents within a region where CFS is a measured issue could be compared with scores for extension agents

working within a region where CFS is less of a measured issue. This type of research could provide insight into the relationship between experience, clientele needs, and extension agent knowledge levels. The researcher also recommends a longitudinal study to identify differences in extension agent training over time. It is possible that extension agent training and education varies depending on such factors as funding, administration changes, and current county needs. If this is the case, then extension agents' knowledge levels would vary based on when they receive training or from whom they receive training. A longitudinal study would help to identify these differences.

- The researcher recommends further exploration and development of a Likert scale for perceptions of CFS. Specifically, the researcher recommends factor analysis to identify constructs within the scale. Research could develop those constructs into a series of scales that may effectively be able to identify respondents' perceptions of CFS in their community.

- The researcher recommends further research to evaluate CFS within a community and compare the results of the assessment with extension agent perceptions.

- The researcher recommends further investigation to identify the relationship between extension agents' perceptions of CFS and their attitudes toward engaging in CFS-related activities or programs. The basis of this research would be a strong foundation in the theory of planned behavior.

- The researcher recommends further research to explore the associations between gender, program focus, and knowledge and perceptions of CFS. This research could reveal either two distinct relationships or a spurious relationship between gender and knowledge and perceptions of CFS. If a relationship is found with gender, this research could delve into the question of why female extension agents have a more negative perspective on CFS in their counties than do male extension agents.

- The researcher suggests further research to examine differences in CEDs interests and non-CEDs interests in a CFS context. In addition, the researcher suggests research to examine CEDs interest in organizational support for CFS and non-CFS related issues. In this way, one could discover whether CEDs are more interested in pursuing professional opportunities in a CFS context, or whether they are more interested in pursuing professional opportunities in all or many contexts.

- The researcher suggests research be done to examine the difference between extension agents who have been with their counties for less than one year and extension agents who have been in their county for more than one year. It is possible that the extension agents who have been with their counties for less than one year may be less interested in receiving organizational support to engage in additional activities because they are already engaged in orientation and basic tasks within their county. It is possible that extension agents who have spent more time in their current counties are more available for additional programs, types of

support, or activities than those who are still establishing themselves within their county. The researcher suggests further research in this area. Specifically, the researcher recommends addressing the following questions: does the position of CED have a relationship with interest in professional development opportunities in a CFS context, and do those who have spent more time with their counties feel more open to or available for professional development opportunities.

- The researcher suggests research to discover whether the extension agents who already work with CFS issues are the ones who are more interested in receiving support to address those issues. Based on the results of this study, one could delve into the question of what specifically motivates extension agents to be interested in receiving support for these types of programs.

- If extension agents who are already involved in programs that address CFS-focused issues are more interested in receiving support for these activities than are extension agents who are not involved in these types of programs, then the researcher suggests research be done to discover the appropriateness of getting other extension agents interested in CFS issues. If extension agents who do not have a CFS-focus in their program can address CFS issues through their own foci, then the researcher suggests research be done to discover how to integrate programs such as natural resources or Sea Grant with CFS-focused issues. In addition, one must pose the question: how can extension work to get extension agents interested in incorporating CFS in their programs?

- In light of these results, the researcher suggests further research to explore motivation and opportunity to participate in programs that address CFS issues.

- The study found that knowledge does not have a strong relationship with extension agents' perceptions or interest in CFS. The researcher recommends further research to explore the role of extension agents' participation in CFS-focused programs or activities on perceptions and interest in CFS in their counties.

Summary

This chapter presented discussion and conclusions for each of the six objectives for this study. Specifically, the chapter discussed the conclusions regarding the knowledge and perceptions of Florida Extension agents regarding CFS. In addition, the chapter addressed the conclusions regarding Florida Extension agents' perceptions of current levels of organizational support and their interest in receiving future organizational support for participation in CFS-focused programs. The chapter provided conclusions regarding Florida Extension agents' participation in CFS-focused programs and drew

conclusions based on the associations of the dependent variables of the study. The researcher made comparisons based on the results of the current study and those of previous research. The researcher also offered recommendations and implications for Florida Extension. Finally, this chapter offered an outline of future research needs in the context of CFS and extension.

APPENDIX A
QUESTIONNAIRE INSTRUMENT

Dear Florida Extension Agent,

Extension programming has long had a focus on food system and agricultural issues. One of the primary elements in understanding the relationship between Florida Extension and the food system is the discovery of Extension agents' knowledge and feelings toward this connection. In order to determine Florida Extension agents' programming needs, it is essential to first understand Extension agents' knowledge of Community Food Security and their perceptions of local Community Food Security issues.

The results of this study will be used to help enhance Florida Extension programming by identifying possible areas of local collaboration and agents' programming needs. The results will be published in my Master's thesis and will be available to Extension administration and to the University of Florida and Extension faculty. As an Extension agent in Florida, you are an essential link to the community and to the county in which you work. Your perceptions and opinions are a crucial part of this study.

The results of this survey will be confidential and will be presented in summary form only. If you have any questions, please feel free to contact me at the number or email address below.

I thank you so very much for your participation and your contribution to this study!

Sincerely,

Alison Eve Lutz
University of Florida
408 Rolfs Hall
Gainesville, FL 32611

(352) 392-0502 ext. 244

allutz@ufl.edu

Community Food Security in Your County

Informed Consent (IRB Approval # 2006-U-0044)- Please read the following and type your initials in at the bottom. Print a copy of this page for your records.

1

Dear Participant: We (Dr. Nick Place, Associate Professor, and Alison Eve Lutz, Graduate Assistant, both in the Department of Agricultural Education and Communication at the University of Florida) are conducting research through a web-based questionnaire to assess Extension agents' knowledge of Community Food Security (CFS) and their perceptions of local CFS issues. The purpose of this study is to identify important CFS issues among Florida Extension agents as well as possible organizational barriers or areas of support in addressing those issues. Participants include all Florida Extension agents, County Extension Directors and Florida District Extension Directors. The survey will take less than 20 minutes to complete. Your identity will remain confidential to the extent provided by law. You have the right to withdraw consent for your participation at any time without consequence. There are neither risks nor benefits associated with their participation in the study. No compensation is offered for participants. The results of this study can be requested. If you have any questions about this research please contact the study supervisor, Dr. Nick Place. The campus address is 305 Rolfs Hall, PO Box 110540, Gainesville, and Fl 32611-0540. The phone number is (352) 392-0502. Questions about your concerns or rights can be directed to the UFIRB office, PO Box 112250, University of Florida, Gainesville, and Fl 32611-2250. I have read the procedure described above. I agree to participate in the procedure, and I have received a copy of this information.

Initials _____

Date _____

2

In the box below, please type your email address. This information will be seen by the researcher only and will not be connected with your responses in any way. It will be destroyed immediately after your response is logged.

_____

Community Food Security in Your County

3

A community is classified as having Community Food Security if all people have access to food at all times.

4

Community Food Security requires the presence of:

- food that is culturally acceptable
- produce that has been bred to be resistant to disease
- agricultural security check points at all state lines
- none of the above

5

Community Food Security is most often defined as:

- when all people obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes self-reliance and social justice
- when there is access by all people at all times to enough food for an active, healthy life
- when the state and local governments have appropriate capacity to detect and respond effectively to bioterrorism emergencies
- when interactions between the environment, genetic resources and management systems are used by culturally diverse peoples to manage the different ways land and water resources are used for food production

Community Food Security in Your County

6

Please check all of the concepts that are ESSENTIAL to Community Food Security.

- food access
- HIV issues
- ecotourism
- sustainable agriculture
- cultural foods
- nutrition
- food safety
- recycling
- local food systems
- social justice
- bioterrorism
- animal rights
- organic standards
- gay rights
- literacy
- prevention of teenage risk behaviors
- prevention of drug use
- availability of exotic foods

Community Food Security in Your County

7

A community is classified as having Community Food Security only if there is a preparedness-plan in place in case of terrorist plan or natural disaster.

8

People who are concerned with Community Food Security encourage the hungry to take advantage of emergency food reserves.

9

Which one of the following would most likely be identified as a problem in terms of Community Food Security?

- farm workers being forced to work more than eight hours without a break
- an outbreak of HIV within a community
- the workers at a local superstore being prevented from forming a union
- a local women's shelter losing its funding

Community Food Security in Your County

10

A community in New York state that imports its coffee from Guatemala can be classifed as having Community Food Security.

11

Please select the best scenario for Community Food Security.

- a community that does not import any food products from outside the country
- a community that produces enough crops to export them to other areas, increasing their income
- a community that relies as little as possible on food outside of a day's drive from the community
- a community that uses emergency food supplies to feed the hungry

12

Community Food Security is NOT concerned with humane work conditions.

Community Food Security in Your County

13

Please indicate your level of agreement or disagreement with the following statements regarding your county.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree

Everyone in my county has to be wary in purchasing unsafe food.
1 2 3 4 5

No one in my county has fresh fruits and vegetables available to them all of the time.
1 2 3 4 5

Some people in my county do NOT have access to supermarkets.
1 2 3 4 5

Everyone in my county is able to purchase food without relying on an assistance program.
1 2 3 4 5

People in my county know where to buy locally produced food.
1 2 3 4 5

Some food sold in my county will cause illness if consumed.
1 2 3 4 5

Very few people in my county are knowledgeable about food safety.
1 2 3 4 5

Many people like to buy organic produce in my county.
1 2 3 4 5

The majority of people in my county are knowledgeable about good nutrition.
1 2 3 4 5

The majority of people in my county know how to safely handle food.
1 2 3 4 5

All of the people in my county would like to eat more local foods.
1 2 3 4 5

Foodbourne illness is not an issue in my county.
1 2 3 4 5

There should be more grocery stores in my county.
1 2 3 4 5

Community Food Security in Your County

The following pages contain five sets of questions. This information is essential to this study. Please complete each set of questions to the best of your ability. These sets have been timed and it should take you 5-10 minutes to complete the sets. Thank you again for your participation!

Community Food Security in Your County

Food Access Issues - Set One

14

Please indicate how relevant or irrelevant the issue of food access is in your county.

Not At All Relevant	A Little Relevant	Somewhat Relevant	Very Relevant
1	2	3	4

15

Please indicate the amount of administrative support you are currently receiving for educational programs that address food access issues in your county.

No Support	Very Little Support	Some Support	A Great Deal of Support
1	2	3	4

16

Please indicate your level of interest in receiving the following types of support for programs that address food access.

	Not At All Interested	Not Very Interested	Somewhat Interested	Very Interested
Program development opportunities	1	2	3	4
Time	1	2	3	4
Financial support	1	2	3	4
The availability of a specialist	1	2	3	4
Acknowledgement in performance appraisals	1	2	3	4
An established curriculum	1	2	3	4

Community Food Security in Your County

Food Safety Issues - Set Two

17

Please indicate how relevant or irrelevant the issue of food safety is in your county.

Not At All Relevant	A Little Relevant	Somewhat Relevant	Very Relevant
1	2	3	4

18

Please indicate the level of administrative support you are currently receiving for educational programs that address food safety issues in your county.

No Support	Very Little Support	Some Support	A Great Deal of Support
1	2	3	4

19

Please indicate your level of interest or disinterest in receiving the following types of support for programs that address food safety issues.

	Not At All Interested	Not Very Interested	Somewhat Interested	Very Interested
Professional development opportunities	1	2	3	4
Time	1	2	3	4
Financial support	1	2	3	4
The availability of a specialist	1	2	3	4
Acknowledgement in performance appraisals	1	2	3	4
An established curriculum	1	2	3	4

Community Food Security in Your County

Local Food Systems - Set Three

20

Please indicate how relevant or irrelevant the issue of local food systems is in your county.

Not At All Relevant	A Little Relevant	Somewhat Relevant	Very Relevant
1	2	3	4

21

Please indicate the level of administrative support you are currently receiving for educational programs that address local food systems issues in your county.

No Support	Very Little Support	Some Support	A Great Deal of Support
1	2	3	4

22

Please indicate your level of interest or disinterest in receiving the following types of support for programs that address local food system issues.

	1 Not At All Interested	2 Not Very Interested	3 Somewhat Interested	4 Very Interested
Professional development opportunities	1	2	3	4
Time	1	2	3	4
Financial support	1	2	3	4
The availability of a specialist	1	2	3	4
Acknowledgement in performance appraisals	1	2	3	4
An established curriculum	1	2	3	4

Community Food Security in Your County

Sustainable Agriculture - Set Four

23

Please indicate how relevant or irrelevant the issue of sustainable agriculture is in your county.

Not At All Relevant	A Little Relevant	Somewhat Relevant	Very Relevant
1	2	3	4

24

Please indicate the level of administrative support you are currently receiving to be involved in educational programs that address sustainable agriculture issues in your county.

No Support	Very Little Support	Some Support	A Great Deal of Support
1	2	3	4

25

Please indicate your interest in receiving the following types of support for programs that address sustainable agriculture issues.

	1 Not At All Interested	2 Not Very Interested	3 Somewhat Interested	4 Very Interested
Professional development opportunities	1	2	3	4
Time	1	2	3	4
Financial support	1	2	3	4
The availability of a specialist	1	2	3	4
Acknowledgement in performance appraisals	1	2	3	4
An established curriculum	1	2	3	4

Nutrition Issues - Set Five

26

Please indicate how relevant or irrelevant the issue of nutrition is in your county.

Not At All Relevant	A Little Relevant	Somewhat Relevant	Very Relevant
1	2	3	4

27

Please indicate the level of administrative support you are currently receiving for educational programs that address nutrition issues in your county.

No Support	Very Little Support	Some Support	A Great Deal of Support
1	2	3	4

28

Please indicate your interest in receiving the following types of support for programs that address nutrition issues.

	Not At All Interested	A Little Interested	Somewhat Interested	Very Interested
Professional development opportunities	1	2	3	4
Time	1	2	3	4
Financial support	1	2	3	4
The availability of a specialist	1	2	3	4
Acknowledgement in performance appraisals	1	2	3	4
An established curriculum	1	2	3	4

Community Food Security in Your County

29

Please indicate your gender.

30

Please indicate which county or counties you serve.

- Alachua
- Baker
- Bay
- Bradford
- Brevard
- Broward
- Calhoun
- Charlotte
- Citrus
- Clay
- Collier
- Columbia
- Desoto
- Dixie
- Duval

- Escambia
- Flagler
- Franklin
- Gadsden
- Gilchrist
- Glades
- Gulf
- Hamilton
- Hardee
- Hendry
- Hernando
- Highlands
- Hillsborough
- Holmes
- Indian River
- Jackson
- Jefferson
- Lafayette
- Lake
- Lee
- Leon
- Levy

- Liberty
- Madison
- Manatee
- Marion
- Martin
- Miami-Dade
- Monroe
- Monroe(Keys)
- Nassau
- Okaloosa
- Okeechobee
- Orange
- Osceola
- Palm Beach
- Pasco
- Pinellas
- Polk
- Putnam
- Saint Johns
- Saint Lucie
- Santa Rosa
- Sarasota
- Seminole

- Seminole Tribe
- Sumter
- Suwannee
- Taylor
- Union
- Volusia
- Wakulla
- Walton
- Washington

31

Please indicate your current Extension rank.

32

Are you currently a County Extension Director?

33

Please indicate how long you have been working with Extension in your current county.

34

Please indicate how long you have been working with Extension in any county or state.

35

What is your primary program focus as an Extension agent?

- Agriculture
- Natural Resources
- Urban Horticulture
- Family and Consumer Sciences
- 4-H/Youth Development
- Sea Grant
- Community Development
- Energy
- Other, Please Specify

36

Please indicate whether you have participated in a program that has focused on the following in the past year (check all that apply).

- Food access issues
- Nutrition issues
- Food safety issues
- Sustainable agriculture issues
- Cultural aspects of the food system
- Social justice issues
- Local food system issues
- None of the above

37

If you marked any of the above topics, please briefly list the programs

Many thanks for completing this survey! If you have any questions or concerns, please contact us at either of the email addresses listed below.

Alison Lutz
allutz@ufl.edu
Nick Place
nplace@ufl.edu

APPENDIX B
INSTITUTIONAL REVIEW BOARD APPROVAL OF PROTOCOL MEMORANDUM

UNIVERSITY OF FLORIDA

Institutional Review Board

98A Psychology Bldg.
PO Box 112250
Gainesville, FL 32611-2250
Phone: (352) 392-0433
Fax: (352) 392-9234
E-mail: irb2@ufl.edu
http://irb.ufl.edu

DATE: January 31, 2006

TO: Alison Eve Lutz
PO Box 110540
Campus

FROM: Ira S. Fischler, PhD; Chair
University of Florida
Institutional Review Board 02

SUBJECT: **Approval of Protocol #2006-U-0044**

TITLE: An Assessment of Florida Extension Agents' Knowledge and Perceptions Regarding Local Community Food Security Issues of Salience

SPONSOR: None

I am pleased to advise you that the University of Florida Institutional Review Board has recommended approval of this protocol. Based on its review, the UFIRB determined that this research presents no more than minimal risk to participants, and based on 45 CFR 46.117(c), authorizes you to administer the informed consent process as specified in the protocol.

If you wish to make any changes to this protocol, **including the need to increase the number of participants authorized**, you must disclose your plans before you implement them so that the Board can assess their impact on your protocol. In addition, you must report to the Board any unexpected complications that affect your participants.

If you have not completed this protocol by January 27, 2007, please telephone our office (392-0433), and we will discuss the renewal process with you. It is important that you keep your Department Chair informed about the status of this research protocol.

ISF:dl

Equal Opportunity/Affirmative Action Institution

APPENDIX C
PRE-NOTIFICATION POSTCARD

UNIVERSITY OF FLORIDA
IFAS

DEPARTMENT OF AGRICULTURAL EDUCATION AND COMMUNICATION

A few days from now you will receive via *e-mail* a request to fill out a brief questionnaire for a research study being conducted at the University of Florida. It concerns the thoughts and experiences of Florida Extension agents regarding Community Food Security in their counties. This postcard is just a reminder to look for the email in the next few days.

This study is important because it will offer Extension agents a chance to voice their thoughts about local needs. The results will serve to help enhance Florida Extension programming by identifying possible areas of local collaboration and agents' programming needs.

Thank you for your time and consideration. If you have any questions or concerns, please do not hesitate to contact us at the e-mail addresses listed below. This research will only be made possible through your generous help.

Sincerely,

Dr. Nick Place
Associate Professor
nplace@ufl.edu

Alison Eve Lutz
Graduate Student
allutz@ufl.edu

UNIVERSITY OF FLORIDA
IFAS

Department of Agricultural Education
and Communication
P.O. BOX 110540
Gainesville, FL 32611

APPENDIX D
FIRST-WAVE QUESTIONNAIRE EMAIL

Hello!

Dr. Place and I sent you a postcard last week about this email. I have posted the link to our survey below. Simply click on the link. The survey should take about 10-15 minutes to complete. If you have any questions, concerns, or technical problems with this survey, please do not hesitate to contact either me via return email or Dr. Place at nplace@ufl.edu. Thank you so very much in advance for your help with this important research study!

http://www.zoomerang.com/survey.zgi?p=WEB224WUCZEFJG

APPENDIX E
SECOND-WAVE QUESTIONNAIRE EMAIL

Hi!

Last week, Dr. Place and I sent you a link to a survey regarding Community Food Security and Florida Extension. This email is simply a reminder to take 10 to 15 minutes to fill out the questionnaire. Regardless of your knowledge or background with this topic, your input and perspective are extremely important to this study. The results of this study will work to help identify agents' programming thoughts and needs. Our goal is to include the knowledge and perceptions of all Florida Extension agents.

I have included the link to the survey below. Simply click on the link and the survey will pop up in a new window. If you have any technical issues or questions regarding the questionnaire or this study, please do not hesitate to contact either Dr. Place at nplace@ufl.edu or me via return email.

Thank you so much for your time and assistance. Your participation will greatly contribute to this study!

Sincerely,

Alison Lutz

http://www.zoomerang.com/survey.zgi?p=WEB224WUCZEFJG

APPENDIX F
THIRD-WAVE QUESTIONNAIRE EMAIL

Hello (names of county agents)!

This email is a final reminder regarding my survey on Florida Extension and Community Food Security. In addition to the importance of this study, your participation in this study will help me complete my thesis and achieve my Master of Science degree. Your thoughts and perspective are valuable to this study, even if you are not familiar with the topic. Please take 10 minutes to complete the survey.

Simply click on the link below to open a new window into the survey. If you have any questions or technical issues with the survey, please feel free to contact me via return email or Dr. Place at nplace@ufl.edu.

I appreciate your time and your help with my thesis!

Sincerely,

Alison Lutz

http://www.zoomerang.com/survey.zgi?p=WEB224WUCZEFJG

LIST OF REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179–211.

Ajzen, I. (1996). The directive influence of attitudes on behavior. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 385–403). New York, NY: The Guilford Press.

Ajzen, I. (2001). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology, 32*, 665–683.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior.* Englewood Cliffs: Prentice-Hall, Inc.

Albarracín, D., Johnson, B. T., Fishbein, M., & Muellereile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin, 127*(1), 141–161.

Anderson, M. D., & Cook, J. T. (1999). Community food security: Practice in need of theory? *Agriculture and Human Values, 16*, 141–150.

Anding, J., Fletcher, R. D., Van Laanen, P., & Supak, C. (2001, December). The Food Stamp Nutrition Education Program's (FSNEP) impact on selected food and nutrition behaviors among Texans [Electronic version]. *Journal of Extension, 39*(6).

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology, 40,* 471–499.

Ary, D., Jacobs, L. C., & Razavieh, A. (2002). *Introduction to research in education* (6th ed.). Belmont: Wadsworth/Thompson Learning.

Bandura, A. (1997). Self-efficacy. *Harvard Mental Health Letter, 13*(9).

Beus, C. E., & Dunlap, R. E. (1990). Conventional versus alternative agriculture: The paradigmatic roots of the debate. *Rural Sociology, 55*(4), 590–616.

Bell, D. (1993). *Communitarianism and its critics.* New York: Oxford University Press.

Bell, C., & Newby, H. (1972). *Community studies: An introduction to the sociology of the local community.* New York: Praeger Publishers.

Bellows, A. C., & Hamm, M. W. (2003). International effects on and inspiration for community food security policies and practices in the USA. *Critical Public Health, 13*(2), 107–123.

Buford, J. A., Jr., Bedeian, A. G., & Lindner, J. R. (1995). *Management in extension* (3rd ed.). Columbus: Ohio State University Extension.

Chaves, D. M., & Pretty, G. M. H. (1999). Sense of community: Advances in measurement and application. *Journal of Community Psychology, 27*(6), 935–642.

Checkoway, B. (2001). Renewing the civic mission of the American research university. *The Journal of Higher Education, 72*(2), 125–147.

Cohen, B. (2002, July). *USDA community food security assessment toolkit.* (Electronic Publication from the Food Assistance and Nutrition Research Program No. 02-013). Economic Resource Service.

Colombo, M., Mosso, C., & De Piccoli, N. (2001). Sense of community and participation in urban contexts. *Journal of Community & Applied Social Psychology, 11*, 457–264. CSREES. (2005a). *CSREES background.* Retrieved December 20, 2005, from http://www.csrees.usda.gov/about/background.html

CSREES. (2005b). *National emphasis areas.* Retrieved December 20, 2005 from http://www.csrees.usda.gov/nea/emphasis_area.html

Curry, J. N., & McGuire, S. (2002). *Community on land: Community, ecology, and the public interest.* Cumnor Hill, Oxford: Rowman and Littlefield Publishers, Inc.

Department of Foods and Nutrition and the Cooperative Extension Service at Purdue University. (2003). *Safe foods for the hungry.* Retrieved August 15, 2005, from http://www.cfs.purdue.edu/safefood/sfhungry.html

DeVellis, R. F. (1991). *Scale development: Theory and applications.* Newbury Park: Sage Publications, Inc.

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method* (2nd Edition). New York: John Wiley and Sons, Inc.

EFNEP/IFAS. (2004). *Expanded Food and Nutrition Education Program.* Retrieved January 15, 2005, from http://efnep.ifas.ufl.edu/

Environmental Literacy Council. (August, 2005). *Green revolution.* Retrieved on September 20, 2005, from http://www.enviroliteracy.org/article.php/234.html

Etzioni, A. (1996). A moderate communitarian proposal. *Political Theory, 24*(2), 155–171.

Etzioni, A. (1997). *The new golden rule: Community and morality in a democratic society.* New York: Basic Books.

Evenson, R. E., & Gollin, D. (2003). Assessing the impact of the green revolution, 1960 to 2000. *Science, 300*(5620), 758–762.

Feenstra, G. (2002). Creating space for sustainable food systems: Lessons from the field. *Agriculture and Human Values, 19*, 99–106.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An* introduction to theory and research. Reading: Addison-Wesley.

Fishman, A., Pearson, K., & Reicks, M. (1999, October). Gathering food and nutrition information from migrant farmworker children through in-depth interviews [Electronic version]. *Journal of Extension, 37*(5).

Flora, J. L. (1998). Social capital and communities of place. *Rural Sociology, 63*(4), 481–506.

Foreign Agricultural Service. (1995, November). *World Food Summit: Basic information.* Retrieved September 20, 2005, from http://www.fas.usda.gov/icd/summit/basic.html

Frischel, H., Pandya-Lorch, R., & Rose, B. (Eds). (1996, May). Key trends in feeding the world. *International Food Policy Research Institute*. Retrieved September 20, 2005, from http://www.ifpri.org/2020/synth/trends.htm

Galster, G. (2001). On the nature of neighborhood. *Urban Studies, 38*(12), 2111–2124.

Gentry-Van Laanen, P., & Nies, J. I. (1995, October). Evaluation extension program effectiveness: Food safety education in Texas [Electronic version]. *Journal of Extension, 33*(5).

Gillespie, G. W., & Gillespie, A. H. (2000). *Community food systems: Toward a common language for building productive partnerships*. Cornell Community Nutrition Program, Division of Nutritional Sciences, Cornell University.

Godin, G., & Kok, G. (1996). The theory of planned behavior: A review of its applications to health-related behaviors. *American Journal of Health Promotion, 11*(2), 87–98.

Gottlieb, R., & Fisher, A. (1996a). “First feed the face”: Environmental justice and community food security. *Antipode, 28*(2), 193–203.

Gottlieb, R., & Fisher, A. (1996b). Community food security and environmental justice: Searching for a common discourse. *Agriculture and Human Values, 3*(3), 23–32.

Greer, B., & Poling, R. (2001, December). *Impact of participating in the Expanded Food and Nutrition Education Program on food insecurity.* Mississippi State, Southern Rural Development Center.

Guest, A. M., & Weirzbicki, S. K. (1999). Social ties at the neighborhood level: Two decades of GSS evidence. *Urban Affairs Review, 35*(1), 92–111.

Gussow, J.D. (2001). *This organic life: Confessions of a suburban homesteader*. White River Junction: Chelsea Green Publishing Company.

Hamm, M. W., & Bellows, A. C. (2003). Community food security and nutrition educators. *Journal of Nutrition Education and Behavior, 35*(1), 37–43.

Hancock, T. (2001). People, partnerships and human progress: Building community capital. *Health Promotion International, 16*(3), 275–280.

Hassel, C. A. (2004, April). Can diversity extend to ways of knowing? Engaging cross-cultural paradigms [Electronic version]. *Journal of Extension, 42*(2).

Henerson, M. E., Morris, L. L., & Fitz-Gibbon, C. T. (1987). *How to measure attitudes*. Newbury Park: Sage Publications, Inc.

Hirst, M. A. (1980). The geographical basis of community work. *Community Development Journal, 15*(1), 53–59.

Holben, D. H. (2002). An overview of food security and its measurement. *Nutrition Today, 37*(4), 156–162.

Holland, L. (2004). Diversity and connections in community gardens: A contribution to local sustainability. *Local Environment, 9*(3), 285–305.

Hoover, T., Cooper, A., Tamplin, M., Osmond, J., & Edgell, K. (1996, June). Exploring curriculum to meet the food safety needs of bilingual youth [Electronic version]. *Journal of Extension, 34*(3).

Kameshwari, P., & Kaufman, J.L. (1999). Placing the food system on the urban agenda: The role of municipal institutions in food systems planning. *Agriculture and Human Values, 16*, 213–224.

Kantor, L. S. (2001). Community food security programs improve food access. *Food Review, 24*(1), 20–26.

Kelsey, K. D. (2002, August). What is old is new again: Cooperative extension's role in democracy building through civil engagement [Electronic version]. *Journal of Extension, 40*(4).

Knoke, D., Bohrnstedt, G. W., & Mee, A. P. (2002). *Statistics for social data analysis* (4th ed.). Itasca: F. E. Peacock Publishers.

Laborde, L. (2003, April). Impact of the Penn State food safety web site as a food safety information resource for extension professionals [Electronic version]. *Journal of Extension, 41*(2).

Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education, 42*(4), 43–53.

Lynne, G. D., Casey. C. F., Hodges, A., & Rahmani, M. (1995). Conservation technology adoption decisions and the theory of planned behavior. *Journal of Economic Psychology, 16*, 581–598.

Martin, D. G. (2003). "Place-framing" as place-making: Constituting a neighborhood for organizing and activism. *Annals of the Association of American Geographers, 93*(3), 730–750.

Mathieson, K. (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research, 2*(3), 173–191.

Mengeling, M. A. (2000). The construction of standardized tests and their uses. In W. G. Wraga & P. S. Hlebowitsh (Eds.), *Research review for school leaders* (Vol. 3). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Minarovic, R. E., & Mueller, J. P. (2000, February). North Carolina Cooperative Extension Service professionals' attitudes toward sustainable agriculture [Electronic version]. *Journal of Extension, 38*(1).

Nagayets, O. (2005). Small farms: Current status and key trends: Prepared for the Future of Small Farms Research Workshop at Wye College. *International Food Policy Research Institute*. 1–14.

National Emphasis Areas. (2005, February). *Cooperative State Research, Education, and Extension Service and the United States Department of Agriculture.* Retrieved July 14, 2005, from http://www.csrees.usda.gov/nea/emphasis_area.html

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: Issues and applications.* Thousand Oaks: Sage Publications, Inc.

Norman, P., Conner, M., & Bell, R. (1999). The theory of planned behavior and smoking cessation. *Health Psychology, 18*(1), 89–94.

Obst, P, Smith, S. G., & Zinkiewicz, L. (2002). An exploration of sense of community, part 3: Dimensions and predictors of psychological sense of community in geographical communities. *Journal of Community Psychology, 30*(1), 119–133.

Obst, P. L., & White, K. M. (2005). An exploration of the interplay between psychological sense of community, social identification, and salience. *Journal of Community & Applied Social Psychology, 15*, 127–135.

Pelletier, D., McCullum, C., Kraak, V., & Asher, K. (2002, April). *Participation, power, and beliefs shape local food and nutrition policy*. Paper presented at the Beliefs, Power, and the State of Nutrition: Integrating Social Science Perspectives in Nutrition Interventions Symposium, New Orleans, LA.

Pelletier, D. L., Kraak, V., McCullum, C., Uusitalo, U., & Rich, R. (1999). Community food security: Salience and participation at a community level. *Agriculture and Human Values, 16*, 401–419.

Program Development and Evaluation Center (2005a). *University of Florida extension faculty orientation modules.* Retrieved January 22, 2006, from http://pdec.ifas.ufl.edu

Program Development and Evaluation Center (2005b). *Statewide goals and focus teams.* Retrieved January 22, 2006, from http://pdec.ifas.ufl.edu/foci/

Reisch, M. (2002). Defining social justice in a socially unjust world. *Families in Society: The Journal of Contemporary Human Services, 83*(4), 342–354.

Row, K. (2002). *UW extension impact report: Family living programs helping communities achieve food security*. Madison, Wisconsin: University of Wisconsin, Cooperative Extension.

Row, K. (2005). *Hunger close to home*. Madison, Wisconsin: University of Wisconsin, Cooperative Extension.

Rubin, H. J., & Rubin, I. S. (2001). *Community organizing and development* (3rd ed.). Needham Heights: Allyn and Bacon: A Pearson Education Company.

Sanders, H. C. (Ed.). (1966). *The cooperative extension service.* Englewood Cliffs: Prentice-Hall.

Sandwich, P.B.J. (2003). *Community food security: It's delicious.* Jif: Smuckers Publishers.

Sarason, S. B. (1974). *The psychological sense of community: Prospects for a community psychology.* San Francisco: Jossey-Bass.

Shultz, K. S., & Whitney, D. J. (2005). *Measurement theory in action: Case studies and exercises.* Thousand Oaks: Sage Publications.

Seddon, G. M. (1978, Spring). The properties of Bloom's taxonomy of educational objectives for the cognitive domain. *Review of Educational Research, 48*(2), 303–323.

Seevers, B., Graham, D., Gamon, J., & Conklin, N. (1997). *Education through cooperative extension*. New York: Delmar Publishers.

Seevers, B. S., & Foster, B. B. (2004, December). A profile of female county agricultural agents in today's CES [Electronic version]. *Journal of Extension, 42*(6).

Sharp, J., Imerman, E., & Peters, G. (2002, June). Community supported agriculture (CSA): Building community among farmers and non-farmers [Electronic version]. *Journal of Extension, 40*(3).

Sheeran, P., Conner, M., & Norman, P. (2001). Can the theory of planned behavior explain patterns of health behavior change? *Health Psychology, 20*(1), 12–19.

Sweet, S. A., & Grace-Martin, K. (2003). *Data analysis with SPSS: A first course in applied statistics.* Boston: Allyn and Bacon.

Thomson, J. S., Abel, J. L., & Maretski, A. N. (2001, April). Edible Connections: A model to facilitate citizen dialogue and build community collaboration [Electronic version]. *Journal of Extension, 39*(2).

Thomson, J. S., Radhakrishna, R. B., & Inciong, L. (2004, May). *Extension educators' perspectives on local food system issues: Implications for extension research and programming*. Paper presented at the 31st National Agriculture Education Research Conference, St. Louis, MO.

UF/IFAS. (n.d. a). The history of Florida 4-H. *Florida 4-H.* Retrieved May 20, 2006, from http://4h.ifas.ufl.edu/newsandinfo/History/about4h/BEGINNING.HTM

UF/IFAS. (n.d. b). Meet your FCS agent. *Alachua County Family and Consumer Sciences.* Retrieved May 20, 2006, from http://alachua.ifas.ufl.edu/fcs/bwilliams.htm

UF/IFAS. (2000). Cooperative extension system. *Extension.* Retrieved December 23, 2005, from http://www.ifas.ufl.edu/extension/ces.htm

UF/IFAS. (2003). Acts, history, and institutions. *Land and Sea Grant.* Retrieved December 20, 2005, from http://ifas.ufl.edu/ls_grant/index.htm#extension

UF/IFAS. (2004a, December). *IFAS facts*. Retrieved December 23, 2005, from http://analysis2001.ifas.ufl.edu/facts150.htm

UF/IFAS Extension Statewide Goals and Focus Areas for 2004–2007. (2004b). *Program Development and Evaluation Center*. Retrieved August 9, 2005, from http://pdec.ifas.ufl.edu/foci/statewideGoals.htm

UF/IFAS. (2005). *Ranks, titles, responsibilities and general position descriptions for county extension faculty*. Retrieved July 24, 2005 from http://ded.ifas.ufl.edu/Faculty_Ranks/Faculty_Titles.htm

United States Department of Agriculture (2004, November). Food security in the United States: Community food security. *Economic Research Service.* Retrieved December 27, 2005, from http://www.ers.usda.gov/Briefing/FoodSecurity/community/

United States Department of Agriculture. (2005, February). *U.S. market profile for organic food products.* Retrieved August 14, 2005, from http://www.fas.usda.gov/agx/organics/USMarketProfileOrganicFoodFeb2005.pdf

United States Department of Agriculture. (2004, May). *What is sustainable agriculture?* Retrieved August 14, 2005, from http://www.nal.usda.gov/afsic/agnic/agnic.htm#definition

University of California Sustainable Agriculture Research and Education Program. (2002). *What is a community food system?* Retrieved December 28, 2005, from http://www.sarep.ucdavis.edu/cdpp/cfsoverview.htm

Voluntad, A., Dawson, P., & Corp, M. (2004, December). The Pendleton community garden: More than just planting seeds. *Journal of Extension, 42*(6). Retrieved August 11, 2005, from http://www.joe.org/joe/2004december/iw2.shtml

Wilkinson, K. P. (1991). *The community in rural America.* New York: Greenwood Press.

Winne, M. (n.d.). *Community food security: Promoting food security and building healthy food systems.* Venice, CA: Community Food Security Coalition.

Wood, G. S., & Judikis, J. C. (2002). *Conversations on community theory.* Lafayette, IN: Purdue University Press.

World Bank (1986). *Poverty and hunger: Issues and options for food security in developing countries*. World Bank Policy Study. Washington, DC: World Bank.

BIOGRAPHICAL SKETCH

Alison Eve Lutz was born in Bethlehem, Pennsylvania. She developed an interest in traveling at the age of eighteen. She worked in Costa Rica with several outreach programs. After returning, she attended Ursinus College, where she majored in communication and theatre. She spent two semesters at the University of Hawai'i, studying international women's studies for her minor.

After graduating college, Alison moved to a biodynamic farm in British Columbia. There, she managed a community-supported agriculture program and worked as a livestock manger. This experience ignited her passion for agriculture, food systems, and education. Throughout her life, Alison has had a love of animals and the outdoors. She has wanted her own small farm since she was five years old.

After moving to Florida, she attended the University of Florida, wanting to specialize in extension education. She would like to work with food systems and community outreach.