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Joy N. Goodwin
University of Florida

Jessica L. Gouldthorpe
University of Florida

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**“SMALL” FARMERS, BIG CHALLENGES: A NEEDS ASSESSMENT OF
FLORIDA SMALL-SCALE FARMERS’ PRODUCTION CHALLENGES
AND TRAINING NEEDS***

JOY N. GOODWIN and JESSICA L. GOULDTHORPE

UNIVERSITY OF FLORIDA

ABSTRACT

Small-scale farmers are faced with many challenges on a daily basis. In addition, they have several needs that, if fulfilled, could help reduce some of their challenges. The small-scale farmer remains an ideal target audience for Extension staff due to the increasing number of these farms combined with the limited impact that they can have with the current set of resources. However, without an adequate understanding of the challenges and needs they face, Extension staff cannot provide ideal service to the small farm audience. The purpose of this research was to discover the challenges and needs of small-scale farmers in Florida. Six focus groups were conducted throughout the state of Florida to identify perceived challenges that small-scale farmers believe affect their operations, as well as their current needs. The data collected suggest that the small farmer population in Florida represents a diverse array of individuals with varying needs. Extension programmers need to consider formatting their programming and information into different media to comply with the cultural, geographical, and agricultural needs of different parts of the state.

The U.S. National Institute of Food and Agriculture [NIFA] (2010) has contended that Cooperative Extension¹ programming still has a place in empowering “people and communities to solve problems and improve their lives on the local level” (NIFA 2010). Agricultural Extension has been recognized as “an essential mechanism for delivering information and advice” in modern farming (Jones and Garforth 1998:9). Though Cooperative Extension has successfully addressed numerous challenges throughout its existence, the need for agents to develop deeper understandings of an ever-changing clientele has persistently been a critique of the Extension system (e.g., Oliver 1977). To enhance the impact that programming has within a targeted community, agents should diligently work to identify: potential audiences, existing needs, and delivery mechanisms that will best serve the interactions between the program and the participants. While Extension has always had some audience, one audience that would benefit from increased

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¹The Cooperative Extension Service was created in 1914 as part of the Smith-Lever Act. The purpose of the Extension service is to relay knowledge from land grant universities to the public (Jones and Garforth 1998).

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attention of land-grant extension services is the small-scale farmer (Hazell 2011; Manganyi et al. 2006; Stephenson 2003). This study seeks to provide agents within the Florida Cooperative Extension System with insights to the barriers and needs of small-farm clientele as they work to better understand this clientele group.

LITERATURE REVIEW

According to the United States Department of Agriculture (USDA) Economic Research Service (2010), small farms are those farms with gross sales of less than \$250,000. According to Newton and Hope (2005), small farms in America account for 91 percent of the farm count and 71 percent of farm assets, but only 27 percent of agricultural production. Furthermore, 93 percent of farms in Florida are considered "small farms" (Gaul et al. 2009), but those only account for 15 percent of all farm product sales in Florida (Institute of Food and Agricultural Sciences [IFAS] 2006). However, these numbers from the 2007 Small Farm Survey do indicate an 8-percent increase in the number of small farms in Florida from 2002 to 2007. This increase in small farm growth in Florida may be due to several factors, including: a desire by consumers to buy locally grown and produced food products, an interest in buying organic and "farm fresh" products, and increased community support for agriculture (Bronson 2011; Dougherty and Green 2011). Therefore, small-scale farmers become an ideal target audience for Extension staff in Florida due to the increasing number of these farms combined with the limited impact that they can have with their current set of resources.

Many researchers acknowledge that a farmer's performance is affected by human capital (Anderson and Feder 2003). Farmers possess a set of both innate and learned skills that affect the manner in which they engage in their farming practices (Anderson and Feder 2003; Jamison and Lau 1982). Extension services can provide capital-enhancing inputs by providing additional skill sets and relevant flows of knowledge to further improve the welfare of these farmers (Anderson and Feder 2003). However, research suggests that small-scale farmers also face distinct barriers that must be considered (e.g., Manganyi et al. 2006; Kendrick 1984; Cantor and Stochlic 2009).

Small-scale farmers have diverse information needs. These farmers are often seeking information about many different crops being grown under variable circumstances (Manganyi et al. 2006; Robotham and McArthur 2001). Furthermore, small-scale farmers are often driven by market conditions to explore alternative crop opportunities and potential marketing options to enhance income (Kendrick 1984; Schofer et al. 2000). Such diverse needs require well-constructed

and accessible information pathways; however, creating these information channels can be challenging.

Small-scale farmers in the southeastern United States often represent an array of backgrounds, including urban and/or minority backgrounds as well as more traditional ones (Schofer et al. 2000). Such diverse backgrounds lead to a rich mixture of abilities, values, and aspirations that affect the information needs of each particular audience (Hollier and Reid 2007; Kendrick 1984; Manganyi et al. 2006; Schofer et al. 2000). Unlike larger producers, small-scale farmers often face issues with having the technological resources and knowledge, as well as management skills, necessary for creating a resilient operation (Kendrick 1984; Uko and Miller 1987). Specific to Florida small-scale farmers, researchers have identified several critical issues that could be addressed through programming, including: identifying and accessing profitable markets, developing business skills, and maintaining easy access to technical information (IFAS 2006). Furthermore, small-scale farmers often lack access to the credit, governmental support, and other financial resources necessary for investing in their operations (Kendrick 1984; Schofer et al. 2000).

Issues with time, specific to management and production, are also more prevalent among small-scale farmers (Cantor and Stochlic 2009; Robotham and McArthur 2001). Often, household members are employed outside the farm, thus limiting participant availability for Extension programming efforts, despite the information being offered (Kendrick 1984; Richardson et al. 1996; Robotham and McArthur 2001; Schofer et al. 2000). Instead, time is focused around production, management, or marketing efforts, with much of the labor coming from within the household itself (Cantor and Stochlic 2009; Kendrick 1984). Furthermore, small farms often utilize a more diverse range of marketing channels, each method having its own set of unique challenges (Cantor and Stochlic 2009; Schofer et al. 2000). Therefore, agents must be prepared to assist these farmers in overcoming each barrier that presents itself.

Extension personnel need to become well acquainted with their clientele to engage them in the knowledge-transfer process and to understand their specific needs (Bernet et al. 2001; Dougherty and Green 2011; Gaul et al. 2009). The needs deemed of interest to local small-scale farmers must be identified and Extension personnel must convey their programming message in a way that would catch the small farmers' attention and engage them in the learning process (Kroma 2003). Furthermore, Extension agents must understand the role that clientele feel they have in establishing the messages being purported by Extension, as well as

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Extension's response to the voice of their perceived needs to increase efficacy of the participants (Gaul et al. 2009; Richardson et al. 1996).

PURPOSE AND OBJECTIVES

The purpose of this research was to discover the challenges and needs of small-scale farmers in Florida. The framework for this study was guided by the National Research Agenda from the American Association for Agricultural Education. The current National Research Agenda (Doerfert 2011) suggests that researchers seek to understand how individuals learn differently based on their cultural and agricultural background and to understand the information needs of agricultural audiences. This priority area further states that researchers should seek to increase "our understanding of related message and curriculum development, delivery method preferences and effectiveness, and the extent of change in audience knowledge, attitudes, perceptions and behaviors" to establish an informed citizenry that will "ensure the long-term sustainability of agriculture, natural resources, and quality of life in communities across the world" (Doerfert 2011:8). To contribute to this priority area, the following objectives guided this study:

1. To identify the self-perceived challenges that small-scale farmers in Florida believe affect their small farm operations.
2. To determine the programming needs of small-scale farmers in Florida.

METHODS

Focus group methodology was used to explore the research objectives. Focus groups allow researchers to gain in-depth insight into the experiences and beliefs that guide participants' attitudes and opinions (Morgan 1998a). Additionally, focus groups are effective in exploring topics and discovering what impacts or matters most to the participants. Since engagement of the clientele, according to Marrison (2005), is one of the most important steps in designing programming for small-scale farmers, focus groups were used to integrate that target audience into the process through interactive involvement at all levels of programming and decision making (Swanson 1998). Furthermore, these focus groups were used to explore the gaps that exist between experts or professionals and this target audience (Morgan 1998a).

Morgan (1998b) has indicated that when using a focus group methodology, multiple focus groups should be conducted to remove the influence of a unique situation that may alter results. Specifically, Morgan (1998b) suggested conducting

between three and five focus groups to minimize this effect. Additionally, within a given focus group, methodologists recommend having six to twelve participants (Ary et al. 2006). For this study, six focus groups were conducted across a period of three weeks. The focus groups were conducted in three different geographic locations (with two focus groups per location) throughout Florida. Each group included eight to twelve participants.

Funding for this study was provided by a Florida Department of Agriculture and Consumer Services specialty crop block grant focused on food safety on the small farm. Before conducting research, IRB (Institutional Review Board) approval for human subjects research was obtained from the University of Florida. The participants were recruited for participation via an external marketing firm. That firm was provided with a list of small-scale farmers in Florida, which was obtained from the Cooperative Extension Service. From this list, the firm used Computer Assisted Telephone Interviewing (CATI) and telephone random digit dialing (RDD) sampling to qualify potential participants.

A protocol was developed to guide the focus group discussion and ensure consistent questioning. The protocol was developed using the procedures and suggestions recommended by Kruger (1998) and Greenbaum (2000). The questions asked in the protocol were developed based on a review of literature concerning the Extension services provided to small farms and the needs of small-scale farmers. Upon completion, the protocol was reviewed by a panel of researchers and Extension professionals for face and content validity. Beyond the protocol, a short demographic survey was created to gather demographic data from the participants at the end of each focus group.

Each focus group was conducted over a period of approximately two hours. All focus groups were moderated by the same trained and experienced moderator. Besides the moderator, a consistent assistant moderator and field note reporter were present at all focus groups. All focus group participants attended a focus group at a local Extension office or University-owned building. The focus groups were held in meeting rooms at all locations. The participants and research staff sat around a rectangular table in each of the focus groups. Video and audio recordings were used in each focus group for transcription purposes. To enhance the credibility of the captured data, each focus group was asked to verify a summary of their collective comments before being dismissed (Flick 2006; Krueger 1998).

Once the focus groups were completed, the six data sets were transcribed by an external independent researcher. The completed transcripts were then uploaded into Weft-QDA for qualitative data analysis. Since discussions within focus groups

are meant to evolve in a dynamic, socially-constructed fashion, giving participants a space that promotes an integration of the individual into the group (Flick 2006), the researcher explored the data using the group as the unit of analysis, rather than the individuals. The locations are called Location 1A, Location 1B, Location 2A, Location 2B, Location 3A, and Location 3B in the Results section of the text.

The focus group moderator analyzed the data using Glaser's (1965) constant comparative method to identify consensus and themes within the data. A consensus was determined by the presence of a theme in four or more of the focus groups. Within the constant comparative method, the researcher continually engages the data both to confirm emerging themes and explore new themes (Flick 2006). Using the same method, a second researcher analyzed the same data and confirmed thematic findings.

RESULTS

The 59 small-scale farmers participating in the focus groups raised a diverse array of fruit and vegetable crops, livestock, tree and nursery products, and row crops. Vegetable and livestock production were the most predominant. The participants demonstrated a fairly even distribution across the five USDA subcategories for small farms, which are: limited-resource farms, retirement farms, residential/lifestyle farms, low-sales farming-occupation farms, and high-sales farming-occupation farms (USDA-ERS 2010). In most of the focus groups it was apparent that many small farmers knew each other, suggesting that, though the groups had been artificially constructed, some pre-existing social networks were present within the group dynamic (Flick 2006).

Most of the participants were between 40 and 69 years of age, with two-thirds of the participants being male. Over half the participants were of Caucasian ethnicity, whereas over a quarter of the participants were of African American ethnicity. Over half the participants from Location 2 were African American, while the other two locations included participants predominantly of the Caucasian ethnicity. A large portion of participants either were first-generation farmers (40.7 percent) or came from families who had farmed for more than three generations (39.0 percent).

Research Objective 1

Research Objective 1 sought to identify the self-perceived challenges that small-scale farmers in Florida believe affect their small farm operations. During the focus groups the participants were asked to consider the challenges they face as small

farmers. Each participant was handed a piece of paper containing a 3 x 3 grid and was asked to write down all the challenges that small farmers like themselves face. They were told that more than one challenge could be placed in a box if they felt that those challenges were equally challenging, and that they were welcome to draw more boxes if they wanted. This procedure, described by Greenbaum (2000) as a participatory approach, is often used in focus groups to encourage participation. After writing down their challenges individually, the participants were asked to share and discuss the challenges of small farmers.

Six major themes emerged from the group discussion concerning challenges. The six themes included: personal challenges, economic challenges, natural challenges, marketing challenges, challenges accessing new information, and challenges associated with the level of agricultural knowledge within the population.

Personal challenges. The personal challenges that small farm participants faced centered on issues of time and personal perceptions and understanding of regulations. Time was a personal challenge that many small farmers struggled with. They indicated that they did not have the time to go on vacation, properly care for their farms, plan for expansions, attend workshops or conferences, or be involved in community organizations. A quotation from Location 1A detailed the challenges involved with having time to get away from the farm for vacation and educational workshops or conferences. "I wrote finding the time to go to Italy with a smiley face, but seriously, finding the time to get away. And you know small farm conferences or any of the educational things are a large time commitment."

Not having sufficient time to make improvements to their operation was a challenge also discussed by the participants. A quotation from Location 2B well summarized the feelings of many participants:

...farmers are world famous for, we work in the business, we don't work on the business. And developing the basic sense of accounting and being able to make our own business decisions....I think if you look at the demise of the small farmer, you will find a lot of us have spent too much time working in the business.

A quotation from Location 3B specifically expressed the desire to utilize alternative marketing strategies through the creation and management of a website. Unfortunately, the time that it took to do this was both challenging and frustrating to the participant. "I never have enough time in the day to create a website, which

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is a challenge.” Other participants discussed wanting to be involved in organizations, training programs, and farm tours; however, they all discussed time as a limiting factor. A sense of guilt was observed among the participants, as they implied regret in not having time to do the various things they wanted to do. A quotation from Location 1A indicated that having a small farm organization was important, but the time needed to create and participate in this organization was not available. Frustrated, the participant discussed the inability to balance importance and time.

Well, I agree with you, a small farm organization would be another thing to do and as small farmers, our time is already limited. And because most of us are ‘mom and pop’ type organizations, but I also understand the strength in numbers bit. So where do we draw the line? We need the strength in numbers, but where do we find the time to do it?

Besides time, another personal challenge that the small farm participants faced was dealing with regulations. Participants discussed having feelings that many regulations were unfair or perceptions about inconsistencies within the regulations. These feelings and perceptions were often negative, overall, largely implying that the government did not want to support the small farmer. Participants also confessed that understanding the regulations was difficult for them. Some participants even discussed actively ignoring regulations they perceived to be unfair or inconsistent. A quotation from Location 1A highlighted the perceived inconsistencies of regulations and the opinion that the government did not do much to help small farmers.

And another concern, something else, is that the county rules and regulations conflict with state rules and regulations. The state rules and regulations conflict with the federal regulations. And it depends upon who you talk to as to what answer you get today, and tomorrow it could be another one. And really, our governments are not very friendly to the family farm or the small farmer.

Difficulty understanding regulations and negative perceptions of the government and regulations felt among participants at Location 3A can also be observed in the following quote from a 3A participant.

I think they have hit on several things that kind of fall under the broad category of what I put down, which is just the government's ridiculous amount of rules and regulations that half of which don't make any sense to me. The other half really were written for massive farms and not for a guy like me with a few thousand plants.

Though the personal challenges concerning time and personal perceptions and understanding of regulations seemed a source of great frustration, they also served as a point of unifying consensus for participants within these groups.

Economic challenges. Many participants also discussed economic challenges, focused primarily on the challenges of having enough money to keep their farm running, accessing grants or loans, meeting certain regulations, and acquiring adequate farm labor; as well as on the current economic state of society. A quotation from Location 2B details the frustration associated with being unable to afford or qualify for a loan to expand farm operations.

We explored flash freezing. Fresh frozen, flash freezing, which amounts to the same thing but it is way out of our financial range. You can't even walk into a financial institution around here and present a farm plan that they will even look at on that scale, being a small farmer.

Additionally, participants discussed the challenges of pursuing and obtaining grants from the USDA. A quotation from Location 1A explained a situation in which grant funding was sought to improve farm operations, but grant funds were never successfully awarded. Frustration was observed in the quotation.

One of (*my challenges*) was economics. The ability to get funding when you need it. As a small farmer, some of the larger scale places do USDA grants and those kind of funds. I've been going through that for the last several, last year and a half, trying to get grants.

The economic challenge of accessing funding for expansion or improvements was accompanied by the challenge of affording expenses, such as those incurred when complying with regulations. A quotation from Location 3A described the expense to comply with regulations. It was observed in the quotations that small farmers were deciding, sometimes, to ignore regulations to avoid the extra expense.

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In order to comply with federal regulations, as an egg producer, the licenses, permits, and physical facilities, are gonna cost you about \$800 a year. Just for the paperwork...So, most of us are small enough that we just fly below the radar and essentially ignore all of the regulations. Well, you know, we don't like to do that. We would like to comply.

Beyond the expense of regulations, many small farmers discussed how the current economic situation had affected their farming operation and created hardships. A quotation from Location 3B highlighted the domino effect of pricing, which was caused by the economic state. "But the price of corn futures is the highest it has ever been, which in turn drives the soybean price up, which in turn, drives the citrus pulp and pellet price up. And it just, you know..." The expense of labor, difficulty finding labor to support farm operations, and the cost to a farm operation if migrant labor were not available were discussed by participants. A quotation from Location 1B detailed concern with the impact on farming operations if migrant labor were prohibited.

So there is a great topic. Labor and management, which you have to expect, increased regulation of labor, the threat of losing all of our immigration labor because white folks don't work or even apply. You can't run a farm without immigration labor. You cannot. Every one of us would be out of business if they stopped immigration. With the stuff that goes on in D.C., we don't know if we will be in business next year.

Discussions about the economic challenges associated with small farms addressed the challenges of both funding and expenses. Within each group, frustration and distress were common among the participants as they chatted about the economic challenges associated with their operations.

Natural challenges. The natural challenges identified by participants included common threats of weather, pests, disease, and natural resource availability. Discussions about these natural occurrences mainly revolved around the difficulty of overcoming these challenges. A quotation from Location 3B discussed the yearly struggles to combat pests that threaten farm operations.

The pests are the worst, as they are probably everybody's problem. My biggest thing is, every single year a new pest comes in that attacks my crop.

I have to learn about it and I have to learn how to deal with it and it is mostly from people bringing it in from foreign countries.

Weather was discussed as a threat to both the farmer's crops and their budget. A quotation from Location 3A highlighted the challenges that farm operations encounter because of weather fluctuations. "And having these severe weather fluctuations, we had to replant a number of times. And that sucks up the budget immediately, real quick." Besides the natural threats of pests and weather, both livestock and plant-based diseases were discussed by participants. A quotation from Location 1A detailed the challenges associated with disease and gave examples of steps that could be taken to help limit disease on a livestock operation.

One of my obstacles is diseases. You know, raising goats, they are very disease prone if you don't manage them right, and external diseases and internal diseases on the farm. So we have a very aggressive disease management plan at our farm. Certain vehicles we don't let in, certain vehicles we wash when they come in. Foot baths are available. On certain places on the farm there is no access, there is a lot of hand-washing going on, shoe washing going on. Trying to, we don't let tools come in, we don't let animals come in and get on the ground. If somebody brings one, it has to stay in the trailer or in a designated area. We have people come by appointment so we can be prepared for them. And we have actually seen a real decrease in our diseases...

The availability of natural resources, such as water, fertile soil, land, and other resources, was another challenge discussed by the small farm participants. The importance of water to farming operations was discussed in a quotation from Location 3B. "Of course, the other thing is, how big is your well? You can only grow so much water. So, it is all about resources too." The availability of land was also perceived as limited, due to price and urban sprawl. A quotation from Location 2A discussed a participant's inspiration to find unconventional land to overcome the land availability and cost challenges.

I opened in a downtown location, as an experiment for a bunch of reasons. For one, I couldn't find any reliable information out there on the numbers of what a hydroponic farm will do. And everyone was saying, there's no land, there's no land. So I put it on a warehouse roof downtown. I mean,

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there is plenty of land, but no one looks up. The beauty of the land that you look up for is that it is pretty much paid for already, which certainly helps on the cash flow.

Additionally, participants discussed problems with soil. While some participants discussed the need to fertilize, participants in Location 1B discussed the need to supplement grazing livestock because of a mineral deficiency in the soil. These natural challenges of weather, pests, disease, and the availability of natural resources are a continual source of concern and attention for small farmers. However, even from the discussions that occurred within the focus groups, the issues may evidently not be as insurmountable as thought by the participants. Access to information and alternative methods have helped some small farmers overcome such challenges.

Marketing challenges. Small farm participants also conveyed the challenges associated with marketing, market availability, and competition. The perceived limitations of market availability and marketing options often centered on location and the costs of advertising. A quotation from Location 3A highlighted the difficulties of marketing farm products when the operation is based in a rural location.

My nearest neighbor is over a mile away and so (chuckles), I am out in the middle of nowhere. You turn off this road and off that road and off that road until you are driving through the woods for the last couple of miles.

Additionally, participants discussed the role of competition for available markets. Access to competitive markets as well as marketing farm products when surrounded by larger producers were challenges discussed by the participants. A quotation from Location 2B detailed this problem: "Marketing is a big problem with us. The big fish always eating up the little fish. Small farmers don't have good access, cannot get in on a lot of the larger good markets and all of the conditions that goes along to explore that particular issue."

As discussed previously, the time needed to market or advertise farm products was seen as a substantial challenge. Participants also identified the costs associated with advertising and accessing advertising channels as formidable challenges. A quotation from Location 1B described how the loss of traditional advertising channels and the cost of advertising were affecting farm product marketing.

Advertising is expensive in any large form in newspapers and magazines. So there was a small newspaper that went around to 25,000 homes in the counties near where I live; Levy, Gilchrist, all the rural counties; but it went out of business. That little ad for \$20 a month got me a lot of business, considering. It is just really hard to find a good way to advertise that is affordable.

Competition, both international and domestic, challenged the marketing success of small farm producers in these focus groups. A quotation from Location 3B discussed dealing with the challenge of marketing by being flexible in market and product selection: "You have to be flexible and you have to change all the time. Because somebody down the street is going to grow. Or somebody is going to come up to the market that is going to compete with you."

Beyond local competition, the small farm participants discussed the challenge of marketing when facing international competition. The participants stated that they felt the pressure of international competition when international products were sold at farmers markets or other local markets. International competition was also discussed by participants as an issue of regulation because international products were not held to the same level of regulation as the participants' products. A quotation from Location 1A detailed the concern and frustration surrounding international competition.

It is almost like a double standard though, this is what really cost me a lot, is the government comes in and told us and educated us on food safety, yet you can export anything in any dirty container from any third world country into this country and undersell our products. And the government just stands there.

These participants face a variety of challenges associated with marketing, including challenges of market availability and competition, many of which are compounded by other identified challenges, including limitations on time and expenditure.

Information access challenges. During the discussion many small farmers expressed frustrations associated with accessing information, including either an absence of or struggles with locating the desired information. Accessing information in a timely manner was discussed by the participants as a challenge. When timely information was delayed, the small farm participants often missed beneficial

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opportunities. A quotation from Location 2A explained the shortfalls of receiving information too late: "I put state and local government so we can get faster information about the new deals and stuff like that. For how to get support for grants and different things. When we get the information, it's too late."

Along with accessing information in a timely manner, the process of accessing information was also discussed by the participants as a challenge. The plethora of information available overwhelmed many participants, often indicating difficulties in finding information that they needed. A quotation from Location 1B discussed the problem of sorting through information to find what was needed.

So I would like the answers to be a little more available. And even the university has some good answers, but it is not as accessible as you think it would be. And even within the university, there is too many answers out there on how to grow.

Besides accessing information, participants also discussed dealing with the challenges of voids in information on certain topics. One example given by participants was the lack of a definition for "local food." Participants indicated that a definition of local food would be beneficial to both producers and consumers. A quotation from Location 3B highlighted the confusion surrounding local food and the need for *local* to be defined.

It is a scary thought too, I mean, I'm a local farmer and everything, and I don't know why they are pushing it so hard right now. I mean they are just pushing it, I see it everywhere I go. Every magazine I see is 'buy local.' Everything in the stores is 'buy local, buy local.' But there is no definition to buying local. This man over here, he is buying local even though he drives 300 miles north. That's the definition. We go, buying local goes way up into Georgia. And that is not buying local, is it?

Accessing information was seen as a substantial challenge for participants. These small farmers felt that they often missed beneficial information that could enhance their operations because they either could not find information, found the information with too little time to spare, or needed information that was unavailable.

Agricultural knowledge challenges. One unique challenge identified by participants involved the minimal agricultural knowledge of the general population. Participants

expressed concern not only with the knowledge level of consumers, but also with that of Extension professionals, USDA, veterinarians, and policy makers. Consumer knowledge was considered a challenge for participants because, without adequate agricultural knowledge, participants felt that consumers were unaware of local products, did not know how to prepare products properly, did not understand how food was grown, and were unable to identify with the inputs required to produce food. A quotation from Location 1A discussed the challenge of getting consumers to understand how to prepare farm fresh products.

And I've run into a situation, especially true with the vegetables, they are so used to seeing it in the cans or frozen that they do not know how to prepare fresh vegetables so you have to become the educator in telling them how to use the product. And then they are still very apprehensive because it doesn't look like what they are used to seeing because it is not chopped up and frozen or canned.

The agricultural knowledge of professionals was also a challenge to the participants because the participants felt that without agricultural knowledge professionals could not give small farmers the help they needed. The participants noted that they had often ran into instances when an Extension agent could not answer a question, a USDA employee could not provide information about a USDA grant, or a veterinarian did not know how to treat livestock. A quotation from Location 2B discussed an instance when an Extension agent was helpful, but also indicated that many Extension agents or professionals could not answer specific questions.

There's times where I'll ask Mr. R something or an Extension agent a specific question about what is going on. Week before last, I had snap beans coming up with a white leaf. I had never seen that before. Mr. R asked me, "did you daylight 'em?" Yeah, I daylighted them. That's what happened. The roots hadn't gotten out to be fertilized yet. Well, that made sense because they was turning green in two days. You need to have your Extension agents and your people that you are supposed to be able to trust, they need some practical knowledge too. And I can guarantee a lot of the PhDs out in Gainesville and Knoxville and Tallahassee and Athens and Baton Rouge and all that, they don't know what daylighting means.

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The agricultural knowledge of politicians was also a concern among the farmers. Participants conveyed concern in knowing that politicians with little agricultural knowledge could set regulations that affect small farm operations. A quotation from Location 1B summarized the perceived lack of real agricultural experience and knowledge among politicians. "That is the problem with our regulations, Democrat or Republican, it don't matter, we got people there who has never got their foot in chicken crap." Overall, these small-scale farmers expressed great concern regarding the lack of agricultural knowledge among both consumers and professionals, indicating the impact of such limited knowledge on both their current and future success.

Research Objective 2

Research Objective 2 sought to determine the programming needs of small-scale farmers in Florida. During the focus group, participants identified several needs they believe exist for small farmers, including: enhanced information and resource channels; improved and accessible trainings; consumer education programs; and enriched Extension involvement and knowledge.

The need for information/resources. Paired with the challenge of accessing information, participants identified a need for enhanced information and resource channels. Specifically, the participants identified a need for advanced, topic-specific, and small-scale farmer-friendly information, as well as hard copy documents. A participant from Location 1B explained that Extension resources and information were focused on growing and production. The discussion called for advanced information that goes beyond growing and addresses the marketing and management of small farm operations.

My impression of the university system is that it spends a tremendous amount of time focusing on how to grow, and very little, from an Extension standpoint, very little information on how to market. Every one of us becomes the salesperson. And there is not extensive information, there is tons of stuff on how do you produce the crop, but very little on how you sell it. And I think that is a real, from an accounting standpoint, unless you go and teach yourself how to be an accountant, there is not a tremendous amount of bookkeeping stuff available, at least through the current information available.

Difficulties or unfamiliarity with technology caused many participants to want hard copy resources as a tangible reference resource. Additionally, participants discussed wanting information that was topic or crop specific, but also designed with the small farmer in mind. Specifically, they indicated that topic- and crop-specific information would be more helpful than general information that had to be applied to different crops. A quotation from Location 3B focused on the need for hard copies and crop-specific information.

Put out brochures that are readily available for anybody to pick up. Very similar to what you have on a couple other things. But for certain crops, specify certain things on each brochure. Like how to handle lettuce, how to handle eggs, and how to handle citrus.

Similar to needing information that was crop specific, the small farm participants also discussed the need for information that was small farm-specific. The participants asserted that information and resources were often tailored to meet the needs of a large producer or operation. Because of their smaller size and nonindustrial practices, the small farm participants indicated that they needed information and resources tailored to them. A quotation from Location 1A explained how small farm practices were often different from the practices recommended in available information and resources.

EDIS [*university Extension documentation system*], EDIS has a lot of good documentation out there. The issue is that EDIS does not cover non-traditional farming, it covers traditional farming. And we don't use any hormones or antibiotics or industrial methods, chemicals, and so a lot of the stuff that is out there doesn't apply to us.

From these discussions, the small-scale farmers self-identified several ways to overcome their previously-defined information challenges. Specifically, it was recommended that these challenges be addressed through providing information and resources that are advanced and topic specific, small farmer friendly, and available in hard copy form.

The need for improved and accessible training. The participants also discussed frustration with current training and indicated that they needed improved and accessible training opportunities. Specific improvements included providing trainings that are affordable, in easily accessible locations, available in distance

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formats (e.g., DVD or online), held at convenient times, and commodity specific, along with providing quality information. A participant from Location 1A discussed the favorability associated with distance-based digital training: "And it would be extra handy if it was on the internet." Digital training was favored by many participants because they could complete it at a time and in a location that was convenient to them. The participants discussed needing training that was both accessible and convenient, so that it had minimal interference with their daily operations. A quotation from Location 3B highlighted the frustrations associated with traveling to training sessions.

And some of the programs they have, they have them in big areas. And to do some of the business we are doing with the produce, you can't turn them loose and go for two days and travel and stay overnight and come back. You need to be able to go take it and be done with it. Have more sessions in more generalized local areas.

Beyond accessibility, the participants agreed that training needed to be beneficial and worth their time. Several participants discussed being previously disappointed with trainings that they had attended. A quotation from Location 2B indicated that if the quality of trainings were improved then more people would find value in them: "Maybe they've got to look at the program that they offer. If it's good enough, people will come." From these discussions, the participants self-identified ways for Extension to, again, meet their information needs. Improved, accessible trainings were identified as a need, since a general lack of satisfaction with content, location, and times of previous training led the participants to identify this area as a point of concern.

The need for consumer education. Another component the small-scale farmers identified was a need for an agriculturally educated consumer. The participants identified consumer education as a need to overcome the challenges they faced associated with consumer knowledge of agriculture. To understand where their food comes from and to understand farmers, the participants indicated that consumers needed more agricultural education. The need for consumer education was explained by a participant from Location 2B.

Children don't know who farmers are. And then you have the older, the adults who just, I don't know what they think. They pretty much think we

are out of our minds. People don't really understand where their food comes from...

Consumer education about food and agriculture was also identified as a need of the consumers themselves. The participants argued that, without education, consumers would continue to eat unhealthily. A quotation from Location 1A detailed the need for consumers to understand what food is fresh and healthy.

...the education that these younger children and young adults should be getting on what they are putting in their mouths now, so that when they get to be as old as I am, they know what it means to eat something fresh, what it is. I mean, there was the big thing at the Small Farms Conference about selling to schools. Try to get involved in that process. Try to sell lettuce to a school district unless you get elected to it. But realistically, the education to the children, I mean we are too old to learn now, we think we know. But it is the generations coming up that we really need to start banging them on the head and say, "Hey, enough is enough." And I'm not even talking about the obesity crisis or anything else, which I am very sensitive about. But, just healthy eating.

The small-scale farmers identified the needs not only of small farmers, but also of local consumers, in suggesting a need for improved consumer education regarding agricultural and food systems. Such programming could enhance not only small farm efforts, but local healthy eating efforts as well.

The need for Extension involvement and knowledge. The last need identified by the small-scale farmers was an improvement in Extension involvement and knowledge. The participants suggested that Extension agents today have become disconnected with the realities of farm production. The participants expressed frustration with Extension agents' lack of farm visits, as well as their inability to apply academic work to the practical realities of farming. A quotation from Location 1A highlighted the disconnect between academics and farm realities.

And I don't think sometimes that the people in the ivory towers understand what is going on in real life. You know, they are writing the academics and they are talking the talk, but they don't really know what is happening out there. I think they need to know that better.

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The small farm participants also expressed a need for more Extension involvement. The participants indicated that they wanted Extension agents to visit their farms and interact with them. Increased involvement was also discussed by the participants as a way to improve the Extension agents' hands on experience and applicability. A quotation from Location 2B reflected on the history of the Extension Service and discussed the need for Extension to return to its historical roots.

Just tell him, don't ever forget George Washington Carver. Don't forget that, that's what Extension was built on. The little wagon he had going out to the field and hands on work with them guys. I think the Extension Service need to get back to that again. The basics, teaching people basic survival skills. I think it will go full circle again. And you can carry your laptop, but you gonna have to go back to teaching people the real life skills.

By addressing this need for increased Extension involvement and knowledge, the small farm participants felt that the Extension Service could better serve small farmers, while developing the skills necessary to better apply their academic knowledge.

DISCUSSION

Though Cooperative Extension has successfully addressed numerous challenges throughout its existence, agents have been persistently called upon to develop richer understandings of their ever-changing clientele. To enhance the impact that programming has within a targeted community, agents work to identify potential audiences, assess what needs exist, and determine which delivery mechanisms will best serve the interactions between the program and the participants. This research highlighted the challenges and needs of the small farm clientele within Florida, giving agents greater insights to this clientele group. The challenges identified by the small farmers included personal challenges, economic challenges, natural challenges, marketing challenges, information access challenges, and agricultural knowledge challenges. The small farm participants indicated that they needed information/resources, improved and accessible training, consumer education, and Extension involvement and knowledge.

The small farm participants in these focus groups identified access to information as both a challenge and a need. However, the information needed by the participants was not uniform across all participants. Some requested hard-copy

information, while others preferred digital or online media. In addition, the small farmers specified the need for information to be crop specific and not generalized. The need of small farmers to have access to information specific to many different crops has been previously identified (Manganyi et al. 2006; Robotham and McArthur 2001); however, the present research identified the need of information to be presented through various media channels for small farmers. The need for a diverse array of media channels is likely a result of the age and geographic location of the participants in these focus groups. The participants ranged in age, and it was evident that those who were younger preferred digital or online information, while those who were older preferred hard-copy information. Additionally, the geographic location of the participants likely affected their media channel preference. The participants from Location 2 lived in a very rural part of Florida, while participants from Locations 1 and 3 lived near large urban areas. Those from Location 2 primarily preferred hard-copy information, while those from Locations 1 and 3 had a mix of participants who preferred hard-copy and those who preferred digital or online information. It is likely that advanced information technologies had not diffused as prolifically in Location 2. Therefore, the participants in Location 2 were more comfortable and familiar with hard-copy information.

The personal challenges, marketing, and economic challenges discussed by the participants were similar to the challenges of small farmers discussed by previous research (Cantor and Stochlic 2009; IFAS 2006; Kendrick 1984; Robotham and McArthur 2001; Schofer et al. 2000; Uko and Miller 1987). However, natural challenges and agricultural knowledge challenges were also discussed by these focus group participants. Although natural challenges have always been a struggle for farmers of all sizes, it is assumed that changing climates, the spread of invasive species, water and pesticide regulations, and other changes affecting the environment have heightened the concern over natural challenges among small farmers. It is recommended that Extension take into account the many challenges that small-scale farmers face. Although Extension cannot prevent the occurrence of these challenges, they should develop programming and information guides that help small-scale farmers develop the skills to overcome and manage these challenges.

Although the Florida Cooperative Extension Service has previously identified critical programming areas for small-scale farmers (IFAS 2006), these results suggest that the accessibility, modalities, and effectiveness of these current programs should be assessed. It is recommended that programming be offered at different levels of complexity and during non-typical hours to accommodate those

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who hold employment outside the farm or those who struggle to get away from the farm for programming (Richardson et al. 1996; Robotham and McArthur 2001). In addition, programming should be offered in different formats to meet the various information needs of small farmers and also to improve accessibility.

The demographics collected on the participants suggest that small-scale farmers in Florida represent a broad age range, as well as a diverse length of farming involvement. Just as different generations of individuals require different communication methods, those with little farming experience need to be communicated with differently than those with many years of farming experience. Additionally, these farmers are a diverse array of individuals with vastly different cultural, geographical, agricultural, and communication requirements. To fully understand and capture this diversity, it is recommended that follow-up surveys of small farmers be conducted in each county. The results of these surveys would allow the Extension Service in each county to tailor their programming to the needs of their own clientele. In addition, between-county comparisons of the survey results would provide further insight into the diversity of small farmers and their needs.

As this clientele base grows, as it has done in the last several years, Extension will need to become well acquainted with their clientele, as well as promote programming that attracts the attention of small farmers (Bernet et al. 2001; Dougherty and Green 2011; Gaul et al. 2009; Kroma 2003). Through increased contact and acquaintance with the small farm audience, it is likely that the small farmers' need for increased Extension knowledge and involvement will also improve. By using this information, the Extension Service can work toward improving their services to small-scale farmers while identifying steps for further research.

A new challenge that small farmers face is the shifting agricultural knowledge of consumers. The small farmers in these focus groups identified agricultural knowledge as both a challenge and a need. The farmers understand that consumers need to have an adequate understanding of agriculture not only to support local farm operations, but to also affect society and the health of consumers. The future of the small farm depends on those who want to support small farms, as well as next generations who are willing to run small farm operations. Small farmers in this study felt that consumer education was necessary to secure their future, as well as the future of U.S. agriculture. It is recommended that future research focus on improving the agricultural knowledge and understanding of the twenty-first

century consumer. In addition, it is recommended that the collective agriculture and natural resource industry combat this challenge together.

By examining the self-perceived challenges and programming needs of small-scale farmers in Florida, this research contributed to knowledge regarding the learning, information, curriculum, and delivery information preferences of an agricultural audience (Doerfert 2011). With this information the Extension service can design programming that meets the needs of its small-farm clientele as well as design programming that will help small-scale farmers overcome or manage the challenges that they face.

AUTHOR BIOGRAPHIES

Joy N. Goodwin is a doctoral candidate at the University of Florida and will begin work as an assistant professor at the university in May of 2013. She focuses her studies in agricultural communications and much of her research addresses message testing and consumer perceptions of agriculture. (Email: goodwin.4@ufl.edu)

Jessica L. Gouldthorpe is a doctoral candidate at the University of Florida. Her studies focus on agricultural extension systems and much of her research explores the relationships between both domestic and international extension systems and the audiences they serve. (Email: jlgould@ufl.edu)

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