Planning, Delivering, and Evaluating
an Extension In-Service Training Program
for Developing Local Food Systems: Lessons Learned

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The social movement focused on re-localizing food systems is oriented toward re-creating relationships between producers, consumers, and other community stakeholders. Sustaining community efforts to build local food systems requires preparation of county Extension educators to understand how food supply chains function as systems, facilitate community partnerships, and create equitable access to locally produced food. This paper shares how North Carolina Cooperative Extension designed, delivered, and evaluated a local foods in-service training on these three topics, as well as shares lessons learned through the process. The implications of this study are helpful for Extension educators planning, delivering, and evaluating in-service training programs that support development of local food systems.

Keywords: local foods, local food systems, community-based food systems, local food systems in-service training

Introduction

Local foods represents the latest in a series of social movements oriented toward re-creating relationships between producers, consumers, and other food-oriented stakeholders. As local foods supersede organic in national analyses of consumer demand (Onozaka, Nurse, & McFadden, 2010), there has been a surge of growth in direct marketing channels, backyard production, and community and school gardens, as well as interest in how to "scale-up" local foods to include "mainstream" markets (Friedmann, 2007; Izumi, Wright, & Hamm, 2010).

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Mirroring these national trends, demand for local foods by North Carolina residents has increased in recent years (Curtis, Creamer, & Thraves, 2010). The interest in local foods in North Carolina stems from the multifunctional impact potential that connects rural economic development and farmland preservation with improved food access, health outcomes, and food justice (Creamer, 2012). Stakeholders from a wide variety of disciplines are implementing collaborative local foods projects because of their contribution to these multiple outcomes (Hamm, 2008). As an institution that embodies knowledge from all stages of the supply chain (including production, marketing, and consumption) and is strongly embedded in local communities, Cooperative Extension is poised to play a major role in local food systems (Perez & Howard, 2007; Thomson, Radhakrishna, & Bagdonis, 2011).

Need and Significance of Local Foods Training

In order to successfully explore the opportunities that local food system development provides, Extension educators must demonstrate an understanding of the issues related to local food production, marketing, distribution, consumption, and community dynamics. Many of these interdisciplinary topics are not necessarily related to educators' own disciplinary or program area, and therefore, may present challenges for them. This creates new training needs for Extension educators, for example, coordinating crop production and meeting the requirements of different marketing outlets; working with new producers without alienating traditional farmers; educating consumers about healthy and nutritious food choices and meanings behind producer label claims; and enhancing low-income consumer access to local foods (Barham, 2002; Story, Hamm, & Wallinga, 2009). In addition, many Extension educators are asked to lead, facilitate, and participate in multisector collaborations that include diverse stakeholders with potentially diverging priorities and expectations. As Extension educators' responsibilities and expectations have expanded beyond traditional roles, new training and outreach are needed to provide educators with knowledge about food systems research, as well as tools and guidance about working across disciplinary lines, facilitating community engagement, and addressing social dimensions of local food systems (Raison, 2010).

Research that examines how to meet evolving needs for local food system Extension training, including identifying issues related to designing, delivering, and evaluating cross-program local foods in-service trainings, is minimal (Colasanti, Wright, & Reau, 2009; Thomson et al., 2011; Thomson, Radhakrishna, Maretzki, & Inciong, 2006). The intent of this study is to fill this knowledge gap.

Current Extension Local Food Efforts in North Carolina

Many state Extension programs have responded to opportunities in local food system development by engaging stakeholders in local and regional food system projects and programs. Some states have created programs, publications, centers, and projects related to developing

local and regional food systems. North Carolina Cooperative Extension (NCCE) is a major contributor to local food systems projects. NCCE designated Local Foods as its first 'Flagship' Program and identified a Local Foods Coordinator in each county and for the Eastern Band of Cherokee Indians (101 in total), indicating a strong commitment to align current programs to incorporate and address local food issues. To understand and meet changing needs of Extension educators to adapt to programming expectations of local food systems in North Carolina, NCCE and its partner, the Center for Environmental Farming Systems, have been developing and collaborating on statewide local foods programming for over a decade. These programs include NC Choices, NC 10% Campaign, and NC FoodCorps. Along with the establishment of the Local Foods Flagship Program, NCCE committed to providing Extension educators with additional training and support to meet the rising demand for local food systems programming.

Purpose

The purpose of this study was to evaluate the outcomes of an Extension in-service training program designed to provide a basic overview of local food systems, including conveying the importance of partnerships and cross-program efforts. This in-service training was intended to begin to broach Cooperative Extension's evolving role in local food system development; however, given the complexity of the topics identified in the Introduction, we see this training as only a first step in developing a comprehensive local foods training program. The specific objectives of the study were to:

1. Document the outcomes of local foods in-service training workshops,
2. Identify factors that may contribute to successful cross-program Extension educator in-service training for supporting local foods initiatives, and
3. Share lessons learned from planning, delivering, and evaluating the local foods in-service training program.

Program Development and Delivery

How We Developed the Program

Needs assessment. Through a survey of Extension educators in late 2012, NCCE identified priority training needs on local food systems topics (Lelekacs & Dunning, 2012). The identified highest priority topics were local foods project planning; improving access to local foods for people of limited resources; partnering with local governments and economic development agencies on local foods projects; marketing local foods to restaurants, grocers, and institutions; food safety; farm to school: local sourcing to cafeteria and gardening/programming; and local food production.

Collaborative planning. These high priority training topics provided input into local foods topics selected for training workshops for the 2013 Annual Extension Conference in North Carolina. Local food system training was a key focus for this conference due to Local Foods' new designation as a Flagship program.

Although workshops were given on a variety of topics related to local foods, this paper focuses on the following three topic areas in order to prepare Extension educators as cross-program facilitators, especially in the social dimensions of local food systems:

1. Local foods programming using a systems approach,
2. Enhancing local food access for low-resource communities, and
3. Successful community partnerships for local food projects.

These three broad topics are pillars for sustaining local foods efforts in communities and are relevant for a diverse audience representing all Extension program areas – Agriculture and Natural Resources (ANR), Family and Consumer Sciences (FCS), 4-H Youth Development (4-H), and Community and Resource Development (CRD). These topics also focus on the *facilitation* role of Extension educators to establish community partnerships and enhance the access of low-resource communities to local foods in the process of building local food systems, which has been identified as "a sustainable approach of building capacity" (Raison, 2010, p. 3).

Interdisciplinary teams of University and county Extension educators, as well as non-governmental organization partners, collaboratively designed the local foods training workshops. Teams ranged in size from 3 to 13 people and included program area representation and input from ANR, FCS, 4-H, and CRD, as well as representation from both North Carolina Land-Grant Universities. Title, duration, and program objectives for the three workshops were as follows:

1. *Local Food Systems Programming: Engaging All Extension Program Areas and Community Resources in a Systems Approach*, 3 hours (*Local Food Systems Programming*)

   Participants will be able to do the following:

   - Discuss the status of local foods initiatives in North Carolina,
   - Use the resources and tools available for local food programming across program areas,
   - Identify the network partners and what they are offering to the benefit of local Extension programs, and
   - Describe the complexity of the system in which they are working (systems thinking).

2. *The Role of Extension in Enhancing Access to Local Foods*, 1.5 hours (*Enhancing Local Food Access*)

    Participants will be able to do the following:

    - Explain benefits and barriers to fostering local food systems with a focus toward limited-resource populations,
    - Support local food systems programs and projects, and
    - Explain the Electronic Benefits Transfer (EBT) system and the steps needed to evaluate suitability and initiation within their county.

3. *Moving Forward Together: Secrets of Successful Community Partnerships*, 1.5 hours (*Successful Community Partnerships*)

    Participants will be able to do the following:

    - Explore levels of relationship-building and commitment in partnerships;
    - Identify key competencies and characteristics of effective community partnerships, as well as resources that can help when partnerships develop internal challenges; and
    - Apply tools for shared learning and making progress within the current work environment of complexity, uncertainty, and unpredictability.

How We Delivered the Training Workshops

The local foods training workshops were delivered at the 2013 Annual Extension Conference in North Carolina. Training workshops were open to any Extension educator, and the participants voluntarily selected the workshops they attended from several concurrent sessions on varying topics, including other program and professional development sessions. The following descriptions provide a brief summary of the delivery of the three workshops.

1. *Local Food Systems Programming* – 88 participants

    Discussion was initiated by NCCE faculty with an introduction to local food systems that included research-based factors motivating local foods efforts across the nation, conceptualizing the complexity of food as a system through North Carolina examples, and sharing stakeholder/partnership opportunities that influence the success of projects.

The audience was then divided into problem-solving groups and asked to put systems into practice with fictional scenarios of client needs representing various local foods issues. Groups deliberated and reported back on the following questions:

- Where does this scenario fit within the local food system (A diagram was provided.)?
- What partners do you have and which ones do you need to address this issue?
- How will you work with these partners?

Final presentations included tools and resources available for development of local foods programs and Extension educators sharing their success stories about local foods programming. The workshop concluded with time for general input from participants on their training and resource needs for building local food systems.

2. *Enhancing Access to Local Foods* – 75 participants

The workshop included presenters from NCCE faculty and a state government-based public health partner. The first presenter set the stage by providing an overview of a consumption-oriented supply chain approach to help identify leverage points for improving the accessibility, affordability, and availability of local foods for low-resource communities. The second presenter discussed Farm to School as it relates to a role that Extension educators can play in growing school gardens and teaching garden-enhanced nutrition addressing healthy food choices. The third presenter explained mechanisms that allow farmers' markets and farm stands to serve as access points to locally-sourced produce by accepting Supplemental Nutrition Assistance Program benefits using Electronic Benefit Transfer (SNAP/EBT). The presenter reviewed the process of applying for and setting up SNAP/EBT at these venues, preparing Extension educators with the knowledge and skills to provide technical support and education. The workshop concluded with a 20-minute question and answer session to clarify participants' concerns.

3. *Successful Community Partnerships* – 93 participants

First, an organizational development consultant delivered a simple presentation of successful components of an effective partnership and then applied this material to the complexity of a community food system. Using a systems approach, the presenter addressed key decision-making dynamics often facing community groups and then engaged audience volunteers to share experiences and enrich the discussion. Real-world situations were shared in breakout groups to give participants a better

understanding of how to leverage their own expertise in meeting facilitation, unbiased decision-making, and leadership skills applicable in any community-based effort.

Methods

How We Evaluated the Program

One group, retrospective pre- and post-test quasi-experimental design was employed for the evaluation of these three training workshops. This method is more appropriate for assessing changes in knowledge compared to traditional pre- and post-test evaluation because participants may not be aware of the new knowledge and its application until they learn about it in the workshop. If a pre-test is administered at the beginning of a program, it may be invalid because participants are too inexperienced with the topic to respond meaningfully to the questions being asked on the pre-test (Rockwell & Kohn, 1989). At the end of the program, participants are able to meaningfully compare their levels of understanding before and after the program.

Population and Sample

A purposive sample was used that asked all Extension educators who participated in each of three workshops to complete an evaluation survey at the end of each training workshop.

Instrumentation

Three separate evaluation instruments were developed to assess each of the three training workshops in this study. The format of evaluation instruments was similar; only the content questions were tailored for the materials taught in each workshop. Workshop design team members, which included Extension specialists and county Extension educators, reviewed these instruments and established their content validity.

We asked participants to indicate their programming content responsibility from a list. Each evaluation tool also consisted of the following four major sections:

Participants' levels of satisfaction. This section consisted of five items and a four-point Likert-type scale ranging from 1 = *Not Satisfied* to 4 = *Very Satisfied*. Participants were asked to rate their levels of satisfaction with each of the five items (1. The relevance of information to your programming needs; 2. Presentation quality of instructors; 3. Subject matter knowledge of instructors; 4. Training materials and resources; and 5. The overall quality of the training workshop) on the four-point Likert scale. The Cronbach's reliability alpha of this five-item scale was 0.95. Additionally, participants were asked whether they met their learning expectations and whether they would recommend this workshop to other Extension educators.

Participants' knowledge improvement. Three separate knowledge testing scales were developed for the three workshops. These scales included two five-item scales developed for the *Local Food Systems Programming* workshop and the *Enhancing Access to Local Foods* workshop evaluations and a three-item scale developed for the *Successful Community Partnerships* workshop evaluation. The items in those scales related to the content of each training workshop. These three scales were rated using a five-point Likert scale with the following specific descriptions of each point:

1. *Very Low:* Don't know anything about this topic,
2. *Low:* Know very little about this topic,
3. *Moderate:* Know about this topic but there are more things to learn,
4. *High:* Have good knowledge but there are things to learn, and
5. *Very High:* Know almost everything about this topic.

Cronbach's reliability alpha of these three scales were 0.85, 0.87, and 0.88, respectively. The following knowledge testing scale (see Table 1) is an example used for the *Successful Community Partnerships* workshop.

Table 1. Example Knowledge Testing Scale: Successful Community Partnerships

How do you rate your knowledge about:	Before This Workshop					After This Workshop				
	Very Low	*Low*	*Moderate*	*High*	*Very High*	*Very Low*	*Low*	*Moderate*	*High*	*Very High*
1 Exploring potential opportunities for building effective Extension partnerships?	1	2	3	4	5	1	2	3	4	5
2 The contributing factors for building successful community partnerships?	1	2	3	4	5	1	2	3	4	5
3 Characteristics of effective partnerships?	1	2	3	4	5	1	2	3	4	5

Participants' levels of aspiration. Participants' levels of aspiration can be described as their heightened levels of motivation for the application of practices they learned. The levels of aspiration can be considered as one of the best indicators for determining the effectiveness of a training workshop (Jayaratne, 2010). The aspiration recording instruments were developed by asking whether participants intended to implement the practices they learned in each workshop and providing four answer choices: 1 = *No*, 2 = *Maybe*, 3 = *Yes*, and 4 = *Already doing this*. The

following aspiration assessment instrument (see Table 2) is an example used for the *Successful Community Partnerships* workshop.

Table 2. Example Aspiration Assessment Instrument: Successful Community Partnerships

As a result of this program, do you intend to:	*No*	*Maybe*	*Yes*	*Already Doing This*
1 Identify community partners for promoting local foods?	1	2	3	4
2 Engage your community stakeholders using tools learned in this session?	1	2	3	4
3 Adjust your Extension approach to situation of community partnerships available?	1	2	3	4
4 Develop a community partnership with other Extension agents outside your county?	1	2	3	4

Program improvement questions. We asked the following questions to assist with future program development:

1. What did you like the most about this training workshop?
2. What did you like the least about this training workshop?
3. How could this training be further improved?

Data Collection

We administered the evaluation survey at the end of each training workshop to assess the process and outcomes. A majority of participants completed the evaluation. Sixty-eight participants in the *Local Food Systems Programming* workshop completed the evaluation for a 77% response rate. There were 23 Agriculture and Horticulture Extension educators, 17 FCS Extension educators, and 1 Youth and 4-H Extension educator among the respondents. Fifty-two participants in the *Enhancing Local Food Access* workshop completed the evaluation for a 69% response rate. There were 19 Agriculture and Horticulture Extension educators, 10 FCS Extension educators, and 1 Youth and 4-H Extension educator. The *Successful Community Partnerships* workshop received 68 responses for a 77% response rate. There were 24 FCS Extension educators, 21 4-H Extension educators, and 2 Agriculture and Horticulture Extension educators among the respondents. Other respondents in each of the workshops identified themselves as county Extension directors (7-13%), specialists (9-11%), or representatives of other program areas (e.g., CRD).

We used descriptive statistics to summarize the data and paired sample *t*-tests to analyze retrospective pre- and post-knowledge test scores to determine whether the change in knowledge was significant, as well as a qualitative content analysis of responses to open-ended questions.

Results

Participants' Levels of Satisfaction with Trainings

The first objective of this paper is to document the outcomes of local foods in-service training workshops. Results of our analysis showed that participants were satisfied with the relevance of information, presenters, and overall quality of training in all three workshops (see Table 3).

Table 3. Participants' Levels of Satisfaction

How satisfied are you with:	Local Food Systems Programming Workshop (*N* = 67)		Enhancing Local Food Access Workshop (*N* = 50)		Successful Community Partnership Workshop (*N* = 69)	
	M	*SD*	*M*	*SD*	*M*	*SD*
The relevance of information to your programming needs?	3.2	0.69	3.1	0.61	2.9	0.73
Presentation quality of instructor(s)?	3.3	0.59	3.3	0.61	3.2	0.76
Subject matter knowledge of instructor(s)?	3.6	0.50	3.5	0.61	3.3	0.70
Training materials and resources?	3.2	0.67	3.0	0.69	3.1	0.69
The overall quality of the training workshop?	3.2	0.56	3.3	0.60	3.1	0.79

Note: 1 = *Not Satisfied*, 2 = *Somewhat Satisfied*, 3 = *Satisfied*, 4 = *Very Satisfied*

Evaluation data indicated that more than 79% of respondents said the training met their learning expectations and that they would recommend these workshops to others (see Table 4).

Table 4. Participants' Approval Levels of Trainings

	Question	Local Food Systems Programming Workshop (*N* = 68)		Enhancing Local Food Access Workshop (*N* = 52)		Successful Community Partnership Workshop (*N* = 72)	
		Yes (*n*)	Yes (%)	Yes (*n*)	Yes (%)	Yes (*n*)	Yes (%)
1	Did the training workshop meet your expectations?	63	92.6%	50	96.2%	57	79.2%
2	Would you recommend this training workshop to others?	61	89.7%	45	86.5%	57	79.2%

Participants' Changes in Knowledge

We compared mean scores for participants' pre- and post-knowledge of the content taught in the three workshops. There was significant knowledge improvement on content presented at these workshops (see Table 5).

Table 5. Comparison of Participants' Knowledge Before and After Completing 3 Workshops

Changing Knowledge Related to Comparison of Participants' Knowledge Before and After Completing the:	Pretest M	Posttest M	t	p
Local Food Systems Programming Workshop (N = 68)				
The status of local food initiatives in North Carolina especially as they pertain to Cooperative Extension programming in counties.	3.0	3.9	11.2	.001*
The educational resources and tools available for your local food programming needs.	2.9	3.9	10.8	.001*
What potential network partners are offering to the benefit of local food Extension programs?	3.4	4.0	7.7	.001*
Enhancing Local Food Access Workshop (N = 52)**				
Benefits in fostering local food systems with a focus toward limited resource communities.	3.1	3.7	6.6	.001*
Barriers to fostering local food programs with limited resource communities.	2.9	3.7	8.7	.001*
How to work with limited resource populations in delivering local food programs?	2.9	3.6	6.7	.001*
Successful Community Partnerships Workshop (N = 72)**				
Exploring potential opportunities for building effective Extension partnerships?	3.4	3.9	8.2	.001*
The contributing factors for building successful community partnerships?	3.2	4.0	9.5	.001*
Characteristics of effective partnerships?	3.4	4.0	9.0	.001*

Note: 1 = *Very low*, 2 = *Low*, 3 = *Moderate*, 4 = *High*, 5 = *Very high*
*Significant at *p* < .001

Participants' Potential Practice Changes

At the end of each workshop, participants were asked about their readiness to implement what they learned. Responses to these potential practice changes are summarized in Table 6.

Generally, more than one-third of respondents answered *Yes* that they planned to implement most of the practices in their communities as a result of these workshops. Additionally, the percentage of participants that answered *No* was small, generally below five percent. There was a considerable percentage of respondents in the *Maybe* category, indicating that they have not been fully convinced about the value of implementing those practices or that the practices are not relevant to their plan of work or their community.

Table 6. Participants' Potential Practice Changes after Completing the Three Workshops

As a result of this training, do you intend to:	Percentage of Respondents Reported			
	No	*Maybe*	*Yes*	*Already Doing This*
Local Food Systems Programming (N = 68)				
Organize a meeting of professionals in health, child nutrition directors, education, and other interested leaders to discuss ways of building a successful local food program in your county?	4.6%	24.6%	32.3%	38.5%
Develop partnerships with people beyond your county staff to implement a successful local food program in your county?	1.6%	10.9%	46.9%	40.6%
Implement a successful local food initiative in your county?	3.2%	14.5%	40.3%	41.9%
Enhancing Local Food Access (N = 52)				
Support or initiate local Farm to School programming?	6.1%	20.4%	44.9%	28.6%
Introduce an EBT system to your farmers' market?	17.0%	38.3%	25.5%	19.1%
Conduct educational programs with community partners for enabling limited resource community access to local foods?	2.0%	26.0%	52.0%	20.0%
Successful Community Partnerships (N = 72)				
Engage your community stakeholders using tools learned in this session?	2.9%	17.4%	62.3%	17.4%
Adjust your Extension approach to situation of community partnerships available?	4.4%	19.1%	58.8%	17.6%
Develop a community partnership with other Extension agents outside your county?	1.9%	17.0%	39.6%	41.5%

A relatively higher percentage of participants in the *Enhancing Local Food Access* workshop indicated they did not intend to implement EBT at their farmers' market compared to implementing other activities. This session included a very detailed description of how to establish SNAP/EBT systems at farmers' markets that we anticipated would meet agents' requests for specific information. Although this lower intention to implement EBT could implicate lack of credence in the resource provided or potentially past negative experiences implementing EBT which may have affected how the information was received, we believe that this may also have to do with matching content with individual participant interests, community needs, or plans of work (i.e., some participants may not have farmers' markets in their counties or may not include work with farmers' markets in their plans of work). Therefore, it is also possible that the detailed information provided to agents was a mismatch for their interests. This illustrates some of the challenges of providing very specific information and tools for audiences with different interests and roles. While Extension educators preferred to receive specific information, as indicated in the open-ended responses (see Table 9), more generalized overviews may be more applicable for a wider audience. This tension between providing generalized and specific information in cross-program local foods trainings is explored later in the Lessons Learned section.

Analysis of Composite Measures

This paper's second objective is to identify factors that may contribute to successful cross-program Extension educator in-service training for supporting local foods initiatives. In pursuit of this objective, we used crosstabulations, ANOVA, and linear correlations to determine the relationship between participants' satisfaction, level of knowledge, and job characteristics and their reported intentions to take action. For these analyses, we combined individual questions based on face and content validity into scales representing satisfaction with the training, subject knowledge prior to attending the training, subject knowledge after completing the training, change in participants' knowledge, and overall aspirations to take action based on information learned in the training. As noted above, each scale was comprised of three to five related questions asking about different aspects of the program. The composite "satisfaction" variable is a simple additive scale such that, for example, a person who entered a value of 1 for each of the five satisfaction questions would have a score of 5 for the composite satisfaction variable. We followed a similar procedure to create composite variables measuring prior knowledge, post-knowledge, change in knowledge, and aspirations to take action.

Results from our analysis indicated that satisfaction with the program was positively associated with participants' post-program knowledge, as well as changes in knowledge. In other words, participants who improved their knowledge were also satisfied with the training. Aspirations towards action were not consistently correlated with any composite variable (see Table 7).

Table 7. Linear Correlations Between Composite Variables

	Aspirations	Satisfaction
Local Food Systems Programming (N = 67)		
Satisfaction	0.150	
Prior Knowledge	0.410***	0.143
Post-Knowledge	0.277**	0.471***
Change in Knowledge	-0.211*	0.357***
Aspirations		0.150
Successful Community Partnerships (N = 72)		
Satisfaction	0.266***	
Prior Knowledge	0.226*	-0.006
Post-Knowledge	0.355***	0.516***
Change in Knowledge	0.116	0.454***
Aspirations		0.266**
Enhancing Local Food Access (N = 52)		
Satisfaction	-0.050	
Prior Knowledge	0.020	0.130
Post-Knowledge	0.045	0.410***
Change in Knowledge	0.153	0.176
Aspirations		-0.050

*Note: *p < .1, **p < .05, ***p < .01*

Pre- and post-knowledge were positively correlated with aspirations in two of the workshops; satisfaction was positively correlated with aspirations in one workshop; and change in knowledge was negatively correlated with aspirations in one workshop. From these results, we can postulate that participants with higher subject knowledge at the end of the workshop will be more likely to take action, but the data are not sufficient to state this conclusively.

We also tested the relationship between participants' program areas and composite measures of satisfaction with the workshops, change in knowledge, and likelihood of putting the workshop's lessons into practice (aspirations). We compared mean satisfaction, knowledge change, and aspirational scores across program area groups using ANOVA with Fisher's least significant difference (LSD) tests of statistical significance (see Table 8). The analysis and LSD tests indicated that with only one exception, participants' program area was not significantly associated with satisfaction with the workshops, change in knowledge, or aspirations to put the workshop's lessons into practice. The one exception was that 4-H county Extension educators and county Extension directors in the *Enhancing Local Food Access* workshop were more likely than other groups to be satisfied with the training.

Table 8. ANOVA Tests of Participant Program Area and Satisfaction, Knowledge Change, and Aspirations

	F-Value	*F*-Value Probability
Local Food Systems Programming (N = 67)		
Satisfaction	0.20	0.98
Change in Knowledge	1.12	0.36
Aspirations	1.23	0.30
Successful Community Partnerships (N = 72)		
Satisfaction	0.49	0.84
Change in Knowledge	1.39	0.23
Aspirations	0.25	0.97
Enhancing Local Food Access (N = 52)		
Satisfaction	2.62	0.03*
Change in Knowledge	1.37	0.25
Aspirations	0.83	0.56

*Note: *p < .05*

Analysis of Open-Ended Questions

We used qualitative content analysis to identify common themes in participants' responses to open-ended questions. Inductive category development was used to allow unanticipated issues and questions to emerge. We used this qualitative data to triangulate and inform the

interpretation of the quantitative findings. Several themes emerged from the inductive qualitative content analysis of the open-ended questions in the surveys (see Table 9).

Table 9. Themes from Open-Ended Questions

Question	General Themes
What did you like most about the training workshop?	Hearing success stories from other agents
	Opportunities to share in small groups
	Specific tool (e.g., How to implement SNAP/EBT at a farmers' market)
What did you like least about this training workshop?	Want more 'specifics'
	Not enough time for session or a specific activity in a session
How could this training be further improved?	More time
	More story-sharing
	Specific examples
	Handouts of presentations [rather than digital copies]
What is the most important information you need to deliver an effective local food Extension program in your county?	Shared vision
	Resources to support strategies [data]
	How to reach out to and access communities (particularly low-income communities)
	Balancing traditional and non-traditional Extension stakeholders
What additional training do you need to prepare yourself for delivering effective local food Extension programs?	More information on community and regional partnership opportunities

In general, respondents commented on their preferences for hearing success stories, working in small groups, and desire for specific tools/toolkits (e.g., documents describing process of implementing SNAP/EBT at a farmers' market) and resources.

Lessons Learned and Success Factors for Local Foods Training Programs

Lessons learned and potential success factors for planning and delivering future Extension local foods in-service training programs include the following:

1. The overall lack of association (with one exception) between participant program area and satisfaction with the workshops, change in knowledge, or aspirations was unexpected, as we had anticipated differences between program areas in how content was received based on agents' different experiences, disciplinary lines, and job responsibilities. This finding may indicate that the workshops met their goal of creating cross-program local foods training by addressing issues that are equally relevant to educators in all program areas, thus leading to few differences among program areas in satisfaction, change in knowledge, and likelihood of putting lessons

into practice. This reinforces our perception that the local foods field bridges interests across program areas. Therefore, there is value in Extension educators from all program areas attending local foods trainings on generalized topics, including those focused on social dimensions of local food systems.

2. Based on the satisfaction of the participants with these cross-program workshops, which were informed and designed by interdisciplinary teams and based on the cross-program needs of most local food systems programming, we recommend establishing local foods training planning and design teams that represent multiple program areas, Extension specialists and county Extension educators, researchers, and both 1862 and 1890 Land-Grant institutions.

3. The participants who indicated they were knowledgeable in training content before the training showed higher aspirations to start or continue support of local foods programs than those who indicated less prior knowledge of the training content. This suggests that those with higher levels of pre-training knowledge may want to expand their knowledge and motivation to implement what they learned because of some familiarity with the subject content and applications. By providing knowledge and a supportive space to discuss these issues with colleagues and specialists, county Extension educators may be further motivated to implement and support local foods programs in their counties.

4. The analysis of the participants' responses to open-ended questions indicated that Extension educators appreciated hearing about "local success stories" and "hearing about the successful programs in other counties." This suggests that participants coming into the workshop may be seeking successful application-focused examples. Therefore, it may be important to design trainings that identify and create space for participants with prior knowledge to serve as a resource by offering supportive facilitation in breakout sessions and sharing local success stories.

5. A theme that emerged from the content analysis of the open-ended questions was that participants preferred to receive very specific training and resources. However, giving very specific information in cross-program training workshops runs the risk of alienating those to whom it is not absolutely relevant. To overcome this tension between providing generalized knowledge and the desire by county Extension educators for specific resources and information, we suggest beginning cross-program local foods in-service training with a generalized session and then breaking out into subgroups about different topic areas or creating subgroups for beginners and for advanced educators. This would provide county Extension educators with important background information, while also letting them self-select into more focused or advanced training sessions.

Summary of Outcomes

In conclusion, this paper has documented the process and outcomes of planning, delivering, and evaluating local foods in-service training workshops, specifically those related to the systems and community-based characteristics of local foods. Local foods presents new challenges for county Extension educators and specialists due to the interdisciplinary nature of the field. This paper has suggested how to plan and deliver effective cross-program local foods trainings, an area that will require further evaluation as more states begin to incorporate a focus on local foods into their Extension programming. Needs assessments for local food systems training may need to incorporate targeted questions to flesh out the tensions between Extension educator needs for generalized training, targeted resources and information, and/or beginner and advanced training tracks. Future studies may benefit from the following:

1. Additional evaluation questions that further elucidate county Extension educators' needs, as well as their experiences, in order to both identify areas for generalized training and incorporate application-focused examples of best practices into training programs; and
2. Delayed post-training discussions and interviews to further evaluate knowledge gained and putting in-service training lessons into practice.

References

Barham, E. (2002). Towards a theory of values-based labeling. *Agriculture and Human Values, 19*(4), 349–360. doi:10.1023/A:1021152403919

Colasanti, K., Wright, W., & Reau, B. (2009). Extension, the land-grant mission, and civic agriculture: Cultivating change. *Journal of Extension*, *47*(4), Article 4FEA1. Retrieved from http://www.joe.org/joe/2009august/a1.php

Creamer, N. (2012, December 11). *Public-private partnerships: Opportunities & lessons learned.* Presentation at the USDA NIFA Grantsmanship Workshop, National Webcast, Greensboro, NC.

Curtis, J., Creamer, N., & Thraves, T. E. (2010). *From farm to fork: A guide to building North Carolina's sustainable local food economy*. Raleigh, NC: Center for Environmental Farming Systems. Retrieved from https://cefs.ncsu.edu/wp-content/uploads/stateactionguide2010.pdf

Friedmann, H. (2007). Scaling up: Bringing public institutions and food service corporations into the project for a local, sustainable food system in Ontario. *Agriculture and Human Values*, *24*(3), 389–398. doi:10.1007/s10460-006-9040-2

Hamm, M. W. (2008). Linking sustainable agriculture and public health: Opportunities for realizing multiple goals. *Journal of Hunger & Environmental Nutrition*, *3*(2–3), 169–185. doi:10.1080/19320240802243241

Izumi, B. T., Wright, D. W., & Hamm, M. W. (2010). Farm to school programs: Exploring the role of regionally-based food distributors in alternative agrifood networks. *Agriculture and Human Values*, *27*(3), 335–350. doi:10.1007/s10460-009-9221-x

Jayaratne, K. S. U. (2010). Practical application of aspiration as an outcome indicator in Extension evaluation. *Journal of Extension, 48*(2), Article 2TOT1. Retrieved from http://www.joe.org/joe/2010april/tt1.php

Lelekacs, J., & Dunning, R. (2012). *Extension local foods training and resource needs survey*. Unpublished manuscript, Center for Environmental Farming Systems and North Carolina Cooperative Extension, North Carolina State University, Raleigh, NC.

Onozaka, Y., Nurse, G., & McFadden, D. T. (2010). Local food consumers: How motivations and perceptions translate to buying behavior. *Choices*, *25*(1). Retrieved from http://www.choicesmagazine.org/magazine/article.php?article=109

Perez, J., & Howard, P. (2007). Consumer interest in food systems topics: Implications for educators. *Journal of Extension*, *45*(4), Article 4FEA6. Retrieved from http://www.joe.org/joe/2007august/a6.php

Raison, B. (2010). Educators or facilitators? Clarifying Extension's role in the emerging local food systems movement. *Journal of Extension*, *48*(3), Article 3COM1. Retrieved from http://www.joe.org/joe/2010june/comm1.php

Rockwell, S. K., & Kohn, H. (1989). Post-then-pre evaluation. *Journal of Extension, 27*(2), Article 2FEA5. Retrieved from http://www.joe.org/joe/1989summer/a5.php

Story, M., Hamm, M. W., & Wallinga, D. (2009). Food systems and public health: Linkages to achieve healthier diets and healthier communities. *Journal of Hunger & Environmental Nutrition*, *4*(3–4), 219–224. doi:10.1080/19320240903351463

Thomson, J. S., Radhakrishna, R., & Bagdonis, J. (2011). Extension educators' perceptions of the local food system. *Journal of Extension*, *49*(4), Article 4RIB4. Retrieved from http://www.joe.org/joe/2011august/rb4.php

Thomson, J. S., Radhakrishna, R. B., Maretzki, A. N., & Inciong, L. O. (2006). Strengthening community engagement toward sustainable local food systems. *Journal of Extension*, *44*(4), Article 4FEA2. Retrieved from http://www.joe.org/joe/2006august/a2.php

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