Abstract
This article reports on the perceptions of Extension educators who served as the Local Food Coordinators (LFCs) in promoting the North Carolina Local Food initiative. The study determined Extension agents’ perceptions about the local food campaign, its impacts, campaigning partners, campaign materials, challenges, and alternatives. It was a descriptive survey research conducted with all LFCs in NC. The findings of the study support the notion that promoting local foods has positive impacts on local economies and communities, and has implications for other Extension Services to promote local food campaign as a sustainable community development initiative.

Introduction
Many states have adopted development of local foods as a strategy for sustainable economic development. These local food initiatives promote consumers to purchase local foods and connect them with local producers so that both consumers and producers will benefit from selling and buying locally. The consumer motivation for buying local foods is mainly due to their perceived quality and freshness of local foods and support for the local economy (Martinez et al., 2010). As a result of direct contact with producers in some cases, it is expected consumers will become agriculturally literate and appreciate where their food comes from and how it is grown.

Farmers' markets, community supported agriculture, farm stands, and other direct from farmer food purchases are rapidly increasing (Raison, 2010; Timmons, Wang, & Lass, 2008). Benefits such as increased demand for local produce (Timmons et al., 2008), increased economic return to
communities (Abel, Thomson, & Maretzki, 1999), increased agricultural literacy, and improved health through food safety (Thomson, Radhakrishna, Maretzki, & Inciong, 2006) are just a few reasons for the increasing popularity of local food systems.

According to Mount (2012), there are three “fundamental principles of local food systems...[that] include the (a) reconnection of producer and consumer, (b) the direct exchange through which this occurs, and (c) the shared goals and values that underlie the system” (p. 110). Local food campaigns provide wide range of benefits to producers as well as consumers (Govindasamy, Italia, & Thatch, 1999).

Because of this increased interest in local food systems, many local food initiatives have started offering support. For example, Connecticut's BuyCTGrown; Vermont's Buy Local, it's just that simple; and, in Massachusetts, Be a Local Hero Campaign encourage participants to spend a portion of their food dollars on locally grown foods (Timmons et al., 2008).

In July 2010, North Carolina launched its own consumer marketing initiative using an innovative program, the NC 10% Campaign. The NC 10% Campaign encourages consumers and businesses to sign up and pledge to spend 10% or more of their food budget on locally grown food (defined as within the state of North Carolina). Individual consumers, restaurants, grocery stores, hospitals, and school food services were reached, and partnerships were built in promoting them to commit for the 10% campaign. As this article goes to press, there are 6,712 individuals and 876 business partners who have reported spending $45,883,609 on local foods since the campaign was initiated.

Individuals interact with an online Web portal that tracks their weekly spending and provides real-time data about their individual progress and the progress of the entire campaign. Restaurants and organizations working in the procurement of food are also able to enter data into an online "dashboard" and receive feedback and resources about others participating in their own area, such as farmers or suppliers of local products, creating a cohesive network of producers and consumers across the state.

Extension educators are an integral partner of the campaign. An Extension educator, designated as the Local Food Coordinator (LFC), has been appointed to serve as the point person in each of the 100 counties in North Carolina. By serving as LFCs, the Extension educators participate in educating consumers about the value of making local food purchases and are expected to promote the campaign and encourage people to participate in other local food initiative as an important part of their Extension programming.

Extension educators "bring to the community a wealth of knowledge from subject-matter expertise in food production, food processing, food marketing, diet, and nutrition" (Thomson, Radhakrishna, & Bagdonis, 2011, p. 2). Extension educators' ability to serve their communities with this knowledge can be considered as a prerequisite for a successful program. Thus, Extension is the ideal organization to address topics related to food systems (Perez & Howard, 2007).

Due to their close ties with the local community, Extension educators can play a significant role in promoting local foods with different audiences, including local government, businesses, farmers, and other service providers. In order to maximize the effectiveness of a local food campaign, it is
important to develop appropriate strategies to link with target audiences. This can be achieved by understanding the perceptions of Extension educators about the campaign and its implementation in their own communities. The focus of the study reported here was to determine the perceptions of Extension educators about the NC 10% campaign and its effectiveness and impacts.

**Purpose and Objectives**

The purpose of our research was to determine perceptions of Extension educators about the NC 10% Local Food Campaign. The study was planned to accomplish the following objectives:

1. Determine the perceived impacts of the NC 10% Campaign.
2. Identify partnering organizations and individuals in promoting the NC 10% Campaign at county level.
3. Determine Extension educators' levels of satisfaction with the NC 10% Campaign activities and resources.
4. Identify challenges Extension educators faced during the NC 10% Campaign.
5. Identify strategies and alternatives effective in promoting the NC 10% Campaign.

**Methods**

Our descriptive survey research study was conducted with the 102 Extension educators serving as LFCs. North Carolina has 100 counties and includes the Cherokee Indian Reservation. There is at least one Extension educator designated as the LFC in each county and the Indian Reservation and all of them were included in the study.

The authors developed a Web-based survey questionnaire for the study. The questionnaire included sections about Extension educators' perceptions about the NC 10% Campaign, campaign impacts, campaign partners, satisfaction with campaign events, challenges, and alternatives. The Likert-type scale was used to record Extension educators' perceptions. This scale ranged from 1 = "Strongly Disagree" to 5 = "Strongly Agree." There were a few demographic questions and open-ended questions in the survey.

The content validity of the survey was established by the program management team and a sample group of Extension educators. It was pilot tested with a group of Extension educators to establish the reliability of the scale used for recording perceptions. Cronbach's alpha was 0.91 for the nine-item perception scale. The survey link was emailed with a cover message to the 102 LFCs. Two weeks after the initial email, a reminder email was sent to LFCs. The survey received 39 responses, comprising a 38.2% response rate.

Nonresponse error was addressed by comparing early to late respondents (Lindner, Murphy, & Briers, 2001). An independent sample t-test was used to determine if early respondents and late respondents differed significantly on demographic data and the perceptions scale scores. No
significant differences were found between the early and late respondents on their demographic data and perception scale scores, indicating that the findings can be generalized for the study population.

**Results & Discussion**

Of the respondents, 53% were males, and 47% were females. Agriculture agents represented 35.9% of the respondents, with Horticulture agents being next with 30.8%. FCS agents and others such as County Extension Directors and Program Associates represented 12.8% of the respondents each and Community Development Agents represented 7.7% of the respondents. The results of the study have been organized under each objective.

**Extension Educators' Perceptions About the NC 10% Campaign**

Extension educators' perceptions were recorded using an eight-item instrument with a five-point Likert scale. Descriptive statistics such as means and standard deviations were used to summarize participant responses. The highest mean value was reported for the item "it is important to promote the NC 10% Campaign" as summarized in Table 1.

The second and third highest means were recorded for items "I am satisfied with the 10% Campaign resource materials and support in promoting local food initiative in my county," and "the 10% Campaign improves the local economy," respectively. The review of these three items indicates that Extension educators believe in promoting the local food initiative as a meaningful Extension program. Timmons et al. (2008) expressed the importance of Extension educators in their local food system by saying "the growing demand for local food is expected to provide opportunities for many farmers... and will likely increase needs for information and assistance from Extension professionals" (p. 2).

The lowest mean was recorded for the item "the 10% Campaign has increased the number of producers selling their agricultural products to local buyers." This may be due to the fact that if the demand translated to new supply (assumed but not measured), much of the new supply may have come from existing farmers shifting where they sold their product rather than new farmers entering from the supply side.

<table>
<thead>
<tr>
<th>Perceptions</th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td>It is important to promote the 10% Local Food Campaign.</td>
<td>4.0</td>
<td>0.661</td>
</tr>
<tr>
<td>I am satisfied with the 10% Campaign resource materials and support in promoting local food initiative in my county.</td>
<td>3.6</td>
<td>0.617</td>
</tr>
<tr>
<td>The 10% Campaign improves the local economy.</td>
<td>3.6</td>
<td>0.742</td>
</tr>
<tr>
<td>The 10% Campaign was effective in educating my community about the importance of local foods.</td>
<td>3.5</td>
<td>0.869</td>
</tr>
<tr>
<td>The 10% Campaign is an important part of my every day Extension work.</td>
<td>3.4</td>
<td>0.929</td>
</tr>
</tbody>
</table>
The 10% Campaign helped me build partnerships that help me to promote a local food initiative in my county.

Participation in the 10% Campaign increased the demand for local agricultural products.

The number of individuals who have started a vegetable garden has increased since participating in the 10% Campaign.

The 10% Campaign has increased the number of producers selling their agricultural products to local buyers.

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

Perceived Impacts of the NC 10% Local Food Campaign

The Extension educators were asked to indicate the ways by which the NC 10% Campaign impacted their county. The overwhelming majority of the Extension educators (82.1%) identified the increasing consumer awareness of the value of local food systems as the most important impact of the NC 10% Campaign as summarized in Table 2.

Providing new market opportunities for local producers and contributing to the growth of the local economy were identified by 56.4% and 53.8% of the Extension educators, respectively, as the second and third most important impacts of the NC 10% Campaign. Increasing profitability of local growers, increasing consumer access to local foods, and creating an environment for sustaining local food system were identified as fourth, fifth, and sixth important impacts of the NC 10% Campaign.

When the foods are produced in faraway places and transported to long distance markets, there is a greater negative impact on the environment (Calverley, 2007). Local food systems link producers with consumers, narrow the distance foods are being transported, and contribute to environmental sustainability. However, only 10.3% of Extension educators indicated that the NC 10% Campaign contributed to preservation of environmental quality and conservation of land resources for farming.

Table 2.
LFC Identified Impacts of NC 10% Campaign (N=33)

<table>
<thead>
<tr>
<th>Impact</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Increasing consumer awareness of the value of local food systems</td>
<td>82.1%</td>
</tr>
<tr>
<td>Providing new market opportunities for local producers</td>
<td>56.4%</td>
</tr>
<tr>
<td>Contributing to the growth of the local economy</td>
<td>53.8%</td>
</tr>
<tr>
<td>Increasing profitability of local growers</td>
<td>48.7%</td>
</tr>
<tr>
<td>Increasing consumer access to local foods</td>
<td>43.6%</td>
</tr>
<tr>
<td>Creating an environment for sustaining local food system</td>
<td>41.0%</td>
</tr>
</tbody>
</table>
Partnering Organizations and Individuals in the NC 10% Campaign

Extension educators were asked to identify the extent to which different organizations and individuals in their counties were taking part in the NC 10% Campaign on a three point Likert scale of 1 being "Not at All" to 3 being "Great Extent." Some of the organizations and individuals shared the responsibility, while others collaborated in promoting the 10% campaign. The highest mean on this three-point scale was reported for the county Extension agents and staff as summarized in Table 3.

Farmers markets and Extension Master Gardeners were identified as the second and third most important partners of the NC 10% Campaign, respectively. School boards and hospitals were identified as the least significant partners of NC 10% Campaign. Although hospitals were ranked low on this survey, hospitals in other states have partnered with local food sources. For example, Nottingham University Hospital began sourcing food locally in 2004 (Calverley, 2007).

Table 3.
Partnering Organizations and Individuals (N=33)

<table>
<thead>
<tr>
<th>Partnering Individuals and Organizations</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>County Extension Agents and staff in your county.</td>
<td>2.25</td>
<td>0.568</td>
</tr>
<tr>
<td>Farmers Markets</td>
<td>2.19</td>
<td>0.654</td>
</tr>
<tr>
<td>Extension Master Gardeners</td>
<td>1.80</td>
<td>0.664</td>
</tr>
<tr>
<td>Local Chefs</td>
<td>1.50</td>
<td>0.638</td>
</tr>
<tr>
<td>County commissioners</td>
<td>1.48</td>
<td>0.574</td>
</tr>
<tr>
<td>Economic Development Council at County Level</td>
<td>1.46</td>
<td>0.576</td>
</tr>
<tr>
<td>Food Hub Organizers</td>
<td>1.43</td>
<td>0.634</td>
</tr>
<tr>
<td>NRCS-Soil &amp; Water</td>
<td>1.43</td>
<td>0.573</td>
</tr>
<tr>
<td>Local food advisory council</td>
<td>1.41</td>
<td>0.501</td>
</tr>
<tr>
<td>Farm-to-School program in your county</td>
<td>1.34</td>
<td>0.553</td>
</tr>
</tbody>
</table>
Satisfactory Campaign Activities and Resources

The NC 10% Campaign has used various marketing strategies and communication channels such as a campaign website, newsletters, local newspapers, and displays at grocery stores to promote local foods. Extension educators were asked to indicate the extent to which they were satisfied with these campaign events on a five point Likert scale ranging from 1 = "Not at All" to 5 = "Very Satisfied." The highest mean on this scale was reported for campaign's overall support received in promoting local foods in their counties, followed by the campaign's Web-based resources that provide a connection to local food sources as summarized in Table 4.

Table 4.
Extension Educators' Levels of Satisfaction with Campaign Events (N=33)

<table>
<thead>
<tr>
<th>Levels of Satisfaction with:</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign's overall support you received in promoting local food initiative in your county.</td>
<td>3.82</td>
<td>0.917</td>
</tr>
<tr>
<td>The Campaign's web-based resources that provide a connection to local food sources</td>
<td>3.70</td>
<td>0.864</td>
</tr>
<tr>
<td>Usefulness of the information available at the 10% Campaign website</td>
<td>3.67</td>
<td>0.924</td>
</tr>
<tr>
<td>The Campaign's web-based resources that provide connection to local food events</td>
<td>3.61</td>
<td>0.951</td>
</tr>
<tr>
<td>The Campaign's online weekly reporting system</td>
<td>3.58</td>
<td>1.091</td>
</tr>
</tbody>
</table>

Scale: 1=Not Satisfied, 2=Minimally Satisfied, 3=Somewhat Satisfied, 4=Satisfied, 5=Very Satisfied

The Challenges and Alternatives in Promoting the NC 10% Local Foods Campaign

Extension educators were asked to identify the challenges they encountered when promoting the NC 10% initiative in their counties. Mount (2012) said "the picture is complex" (p. 108) when it comes
to looking at challenges facing local food systems. The most commonly cited challenge was time constraint. Ten percent of the respondents cited that they were busy and had little time to commit for the NC 10% Campaign. The other cited challenges were inadequate number of local producers, consumers’ low interest, and some skeptical attitudes, such as quality toward local food generally.

When public schools and private schools in Maryland attempted to get local foods into the schools, they ran into similar issues, such as inadequate supply of local foods. For example, “for public schools, the top supply-related barriers include[d] seasonal availability, a lack of shelf life…a lack of local supply/producers.” Other issues in public schools included “extra staff needed; delivery considerations; lack of information about where and when local foods are available” (Oberholtzer, Hanson, Brust, Dimitri, & Richman, 2012, p. 5). Other programs at the Center for Environmental Farming Systems are directly aimed at increasing supply of local foods (www.cefs.ncsu.edu).

Extension educators were also asked about the alternative strategies that they had implemented in order to overcome challenges and promote the NC 10% Campaign. The most commonly cited strategies were:

- Educating consumers about using online campaign resources for maximizing their efforts with limited time,
- Use of farmers’ market booths as well as other community events such as wellness event to promote local foods,
- Use of local food demonstration and tasting events,
- Targeting community congregation sites such as churches, senior centers, schools etc. to reach many people with Extension educators’ limited time available for the campaign,
- Demonstrating cooking recipes with local foods,
- Farm tours.
- Distribution of campaign promotional materials such as stickers, magnets, bags, etc.,
- Local advertising about the NC 10% Campaign, and
- Helping consumers input information into Web portal.

Timmons et al. (2008) also gave examples of ways Extension educators could improve the local food system and local food consumption. These included "establishing baselines for how much of what kinds of foods are local in a given time, monitoring changes over time...raising relevant questions for additional research" (Timmons et al., 2008, p. 8).

Finally, Extension educators were asked to describe any suggestions for improving the effectiveness of the NC 10% Campaign in their county. Their most common suggestions were:
Promoting new farmers' markets as outlets for local foods,

- Providing some incentives for the businesses participating in the NC 10% Campaign, and

- Advertising/marketing opportunities for local businesses

**Conclusions & Recommendations**

There was a favorable perception toward the NC 10% Local Food Campaign among the Extension educators serving as LFCs. They perceived the NC 10% Campaign as an important initiative. They also perceived that the NC 10% Campaign improves the local economy and educates their communities effectively about the importance of local foods. Understanding the importance of local food systems is needed to find strategies for strengthening communities for sustainable economic development (Thomson et al., 2011). The findings of the study and the available literature support the notion that promoting local foods has positive impacts on local economies and communities.

Findings of the study have implications for organizing the local food campaign with Extension agents in other Extension services to promote local foods. Extension educators were satisfied with the NC 10% Campaign resource materials and committed to the NC 10% Campaign as an important part of their Extension work. Extension educators perceived that the NC 10% Campaign helped them build partnerships to promote local foods in their counties. If any state is promoting local foods through Extension, it is important to provide online resource materials to Extension agents and build community partnerships to facilitate campaign events at the community level.

The Extension educators were neutral about the contribution of the NC 10% Campaign to increase the number of producers selling agricultural products to local buyers. While not measured directly, one explanation of this was that increased supply was provided by existing farmers shifting their market channels rather than new producers entering the marketplace. However, this situation highlights the need for a local food campaign to pay attention to increasing the number of farmers growing for local markets and linking them with consumers for sustaining local food initiatives. Consumers prefer quality and freshness of produce (Govindasamy et al., 1999). By linking local producers with consumers for direct marketing for fresh produce, both farmers and consumers can benefit (Curtis, Cowee, Havercamp, Morris, & Gatzke, 2008), and it will lead to community capacity building (Raison, 2010).

According to the study, LFCs perceived that there are positive impacts of the NC 10% Campaign. The major impacts they perceived include: increasing consumer awareness of the value of local food systems; providing new market opportunities for local foods and contributing to the growth of the local economy; increasing profitability of local growers; increasing consumer access to local foods; and creating an environment for sustaining local food systems. These impacts of the NC 10% Campaign perceived by LFCs have implications for other Extension systems to consider promoting local foods as a worthwhile Extension program for achieving sustainable communities.

The results show that different institutions and individuals partnered with the NC 10% Campaign to different extents. The most significant collaborations with the initiative can be expected from Extension educators and staff in the county office, farmers markets, and Extension Master
Gardeners. Other significant partnerships can be expected from local chefs in the area, county commissioners, Economic Development Council, food hub organizers, Natural Resource Conservation Service personnel, and local food advisory councils. These local partners collaborated and participated in the 10% marketing campaign.

County Farm-to-School programs and planning departments are the third highest level of partnering organizations. Hospitals and school boards are the lowest level of partnering organizations. Because schools and hospitals are active partners in local food campaigns in other states (Calverley, 2007; Curtis et al., 2008; Oberholtzer et al., 2012), it is important to explore the potential of expanding the partnership with schools and hospitals for promoting local foods.

The results indicate that it is important to provide needed resources and support to Extension educators for promoting local foods. Extension educators were satisfied with the overall support they received from the NC 10% Campaign and the Web-based resources and information provided to promote the local food campaign. Use of the Internet was an effective means to connect consumers with local food markets and track their food dollars spending for local foods.

If the Internet is available at campaign promotional sites such as farmers' markets, LFCs will be able to teach potential participants to use the online system for locating local food markets and tracking the amount of money they spent for local food purchases. When promoting local foods, it is important to tap the full potential of the online marketing that links consumers with the local producers and markets in real-time for achieving desired results.

Due to other Extension responsibilities, Extension educators' time available for the NC 10% Campaign was constrained. This was the major challenge in promoting the NC 10% Campaign. It was a challenging task to encourage consumers to buy at least 10% of their foods locally when there was not adequate number of local producers. This situation highlights the need for paying attention to increasing the number of farmers selling locally. Consumers' low interests and their skeptical attitudes, such as quality concerns toward the local foods, can be challenging when convincing them to buy local foods. Local food campaigns should pay due attention to address consumer concerns about the quality of local foods.

Extension educators felt that educating consumers about using the online resources was the best strategy for sustaining the campaign accomplishments. According to Extension educators, experiential educational strategies such as cooking demonstrations with local foods, tasting events, and farm tours are effective strategies to educate consumers about local foods. Consumer interests and attention are high about local foods during each growing season (Thomson et al., 2011). Due to this reason, it is recommended that Extension educators promoting local foods should tap into this interest and hold demonstrations involving local foods that are in peak season. These demonstrations could be cooking or processing.

Because time was the major constraint for meeting target audiences, Extension educators suggested using farmers' markets and other community events and community congregation sites such as churches for reaching many with their available time. Advertising locally is a good way to attract community members for these planned events. Giving handouts and campaign promotional materials and directing them to sign-up for the campaign on site during an event are effective strategies for
motivating consumers to commit for a local food campaign.

**Limitations and Suggestions for Future Research**

The study reported here was conducted with a limited group of Extension educators serving as LFCs in the NC 10% local food campaign. This may be a limitation of the study. It is suggested to conduct a broad study with a random sample of Extension agents participating in local food campaigns in few states for determining outcomes of local food campaigns and barriers to promote local foods.

**References**


