NARRATIVE

As the local and sustainable food movement has grown, proponents have sought to “scale-up” local production and distribution to reach beyond farmer’s markets, CSAs, and the niche “local food” section of high-end grocery stores. New aggregation and distribution centers outside of established distribution networks have emerged to link local production with local markets. These entities are often designed to fill gaps in the value chain that may have prevented small and mid-sized farmers and food entrepreneurs from entering markets dominated by an established and increasingly concentrated system of nationally and globally-organized wholesalers, processors, distributors, and retailers. At the same time, as demand has grown, some of the larger-scale players in the supply chain have begun to consider adapting and retooling their business models to source food more directly from local producers for local markets. Despite these various efforts to alter established supply chains and create new, more direct links from farm to fork, an estimated 97% of food still travels through extended supply chains that are not localized. Alternative food supply models such as food hubs struggle to match the logistical efficiencies of the established national and global supply chain networks, while large-scale players lack the relationships with local producers and processors that could move product into their supply chains.

The North Carolina Growing Together project seeks to enhance food security by increasing productivity and profitability for producers and improving intermediate elements of the system to increase access and affordability for consumers. The project approach is to work with partners across the local-to-mainstream supply chain to identify the most promising solutions by which local production and associated value-added activities can be scaled-up for conventional markets—the mainstream retail and food service markets from which 97% of food is purchased; pilot implementation of these solutions in North Carolina; and evaluate and report the results for the benefit of other states and regions. The work is organized around two models: A grocery model, represented by project partner Lowe’s Food, and a Military Model, represented by project partner Fort Bragg’s dining services. Engagement with these models also include their related distributors: Merchants Distributors Incorporated, which delivers to Lowe’s 106 stores; national food distributor US Foods, which supplies the Fort Bragg Military, Welfare,
and Recreation facilities; and Foster-Caviness, a regional produce distributor supplying produce to the soldier dining halls at Fort Bragg. Additional project partners include producer advisors, entities active in alternative food supply chains (e.g., food hubs, commercial kitchens), university research staff, and service providers (e.g., the NC Cooperative Extension service). The desired outcome is to increase supply and sales of locally produced food moving into these models while ensuring fair returns to all participants along the supply chain, including farmers and fishers. The five-year project includes research, extension, and academic/educational components integrated to develop nationally-transferable innovations.

**Below is a review of progress in Years 1-3 of the grant and planned activities for Year 4 organized by the objectives and outcomes listed in the original project logic model (appears on the final page of this narrative).**
**Objective 1.** Establish baselines (which will allow for tracking of progress to the two large institutional outlets over the 5 year grant period) and conduct an infrastructure assessment

Desired outcomes (from the original grant Logic Model):

1. Project-related baseline assessments effectively collected through collaboration.

   *Baselines of local as percent of total for Grocery Model and Military Model procurement*

Year 1 Reported Progress: Baseline local food purchases (quantities) from which to track increases in the direct-to-store sales supply chain for the grocery model for produce, meat, seafood, and dairy were collected. Baselines for the distributor to retail grocery (Lowes Foods) model and the produce distributor (Foster-Caviness) to military model are based on NC product as a percentage of all distributor procurement for produce.

Year 2 Planned Activity: Analyze procurement practices at distributors with the intention of offering alternative models for these distributors to track local products through their supply chain. Partner distributors indicate they are unable to cost-effectively track local items.

Year 2 Progress: Grocery Model--data tracking enhanced to include farm size and product type; Military Model--produce distributor (Foster-Caviness) now has ability to report NC local and SC products distinct from other sources; Work with US Foods to create a tracking system interrupted due to pending merger with Sysco; Department of Defense, Defense Logistics Agency, is in the process of adding a “place of origin” data field in its food purchasing system which will permit those ordering food from prime vendors to select for purchase food local to the state.

Combined Year1-Year2 Evaluation: Baseline assessments and comparative measures over time for local products are complete for the Grocery Model. Baseline Assessments and comparative measures for the Military Model produce distributor were achieved in Year 2 after implementation of a tracking system. Proposed addition of a place of origin field could be a game changer for military procurement as it has the potential to impact all ordering from prime vendors. Baselines and comparative measures for mainline distributor (US Foods) were not achieved for the reason reported above.

Year 3 Planned Activity: Work with Military Model mainline distributor US Foods/Sysco to implement tracking system for NC local products. For the Grocery Model work with Lowes Foods to create automatically generated data reporting to track quantity and product type by store to enable each individual store to track its % local (of total) for produce.

Year 3 Progress: For the Grocery Model, project partner Lowes Foods tracks direct-store-delivery volumes for all stores for local produce, dairy, and egg vendors for tracking purchases and reports on the value of local produce as a percentage of total produce distributed through the company’s distribution center. Produce distributor partner Foster-Caviness is able to track the percentage of NC product that moves through its distribution chain. US Foods is unable to track and report on local vs non-local product purchases. New project partner FreshPoint is able to track locally sourced product and is seeking to expand its procurement of produce from NC growers.

Year 4 Planned Activity: Continued tracking to the degree possible of local products procured by partners.
2. Increase in research-based established points from which to build project activities and assess progress

*Food System Infrastructure Assessment*

Year 1 Reported Progress: In partnership with NC Cooperative Extension (NCCE) project staff have almost completed (estimated completion and data release date—November 2013) an online mapped infrastructure database that will be available to the public both through the project website and the forthcoming NCCE Local Foods web portal (anticipated release spring 2014).

Year 2 Planned Activity: Through consultation with the Produce Supply Chain and Development Advisory Team, construct a data-gathering outreach protocol to investigate the potential for use of NC farm seconds in listed fruit and vegetable processors as listed in the infrastructure inventory. Implement outreach plan.

Year 2 Progress: Online infrastructure map and database completed, web portal permits users to add data points and to download the data files. Data protocol (interview & survey) for food manufacturers to determine current and potential use for local produce is complete and being implemented Sept – Nov 2014.

Combined Year 1-Year 2 Evaluation: Infrastructure assessment complete (note this task was scaled back due to fact that funding provided was less than requested, in that detailed information on the infrastructure entities such as square footage of cold storage facilities; services offered by seafood processors was not collected).

Year 3 Planned Activity: Analyze local food manufacturing data, disseminate findings via the Local Food Infrastructure Map, and examine findings with project partners to strategize means to move local produce into the local food manufacturing supply chain.

Year 3 Progress: Feedback from the North Carolina Department of Agriculture & Consumer Services (NCDA&CS) led the project team to conclude that current outreach by the NCDA&CS was sufficient to link manufacturers to sources of NC produce.

Year 4 Planned Activity: The infrastructure inventory map continues to be maintained by the project (link available from the NC GT website), and insights from its creation and use over the prior three years are being used to inform a 7-state effort by the USDA Agricultural Marketing Service to create GIS-based local food system maps. Map information will also be used in a Year 4 study to compare produce and meat supplies (based on vegetable and pastured meat production) to demand (based on population) and access (based on SNAP usage) and compare this to sales infrastructure (farmers markets and grocery stores accepting direct-store-delivery).

*Production Assessments (volume, location, perceived profitability, needs)*

Year 1 Reported Progress: Constructed and fielded a telephone survey of all registered niche meat producers (600+) in the state. The response rate for those contacts that proved to be current was 50%. The survey was designed to gauge the location and size of niche meat operations and their current market experiences.
Year 2 Planned Activity: Analyze the results of the survey for use as a baseline document to measure growth in the niche meat sector over the life of the grant (comparing survey respondents as a panel over time) and to target training and supply chain development activities.

Year 2 Progress: Report on survey findings completed and disseminated online and in 7 presentations to a combined audience of 500+. Findings used to develop trainings for niche meat producers and leveraged to obtain $221K in additional funding for niche meat supply chain work. Survey will be repeated in project year 4 and findings compared to these Year 2 baselines.

Combined Year1-Year2 Evaluation: Niche meat survey complete, survey data analyzed and disseminated in online report form and through presentations to regional and national audiences, and successfully leveraged for $221K in additional funding for niche meat value chain development work. Suggestion that project engage in baseline survey of niche dairy production to serve as a baseline.

Year 3 Planned Activity: Niche Meat Survey to be repeated in project Year 4. Continue to use survey results to inform training and additional research to build niche meat value chains. Design and field a survey to create a baseline of niche dairy production in NC.

Year 3 Progress: A survey and accompanying report were completed for niche dairy production in NC (available on the NCGT website). Complementing this work were two MBA student supply chain teams which analyzed the economics of on-farm bottled milk and yogurt for small/mid-scale (75-150 herd) dairies (project results available on the NCGT website).

Year 4 Planned Activity: The 2013 Niche Meat Survey will be repeated in Year 4. A survey of small/mid-scale seafood and aquaculture producers will be conducted to understand the needs of these sectors for accessing “mainstream” market channels.

**Comparative Supply Chains and Market Channel Assessment**

Year 1 Reported Progress: Project staff working across the four product categories—meat, seafood, produce, and dairy—are in the process of identifying and interviewing a cohort of producers (farmers/fishers) from which to track their supply chain experiences (both quantitatively through volumes, costs and returns; and qualitatively through tracking of producer perceptions of the supply chain relationships) across the length of the project.

Year 2 Planned Activity: Complete the initial Market Channel Report for each of the farmer/fisher cohorts to serve as a basis for supply chain pilot comparisons in subsequent years and from which to track progress of the producer cohorts as they link to mainstream market partners.

Year 2 Progress: Market Channel reports for the current status of local to mainstream partner supply chains complete for produce, meat and seafood producers.

Combined Year1-Year2 Evaluation: Baseline supply chain/market channel analysis for meat, produce, and seafood completed. Dairy supply chain analysis not complete. Findings of baseline reports need to be disseminated in two forms: user-friendly formats to the public and academic research publications.

Year 3 Planned Activity: Track change in status (market channels, economics) of existing farmer-cohorts and expand number of producers and buyers interviewed to expand knowledge base. Examine impact of
food hubs on supply chain relationships and experiences of farmers and buyers; conduct survey analysis to understand relationship satisfaction, commitment, and trust in the produce-vendor to grocer-buyer supply chain to better understand needed support to build and maintain collaborative supply chains. Disseminate findings to public. Initiate and complete economic analysis to quantify the value of produce and meat food hub services to farmers, mainstream buyers, and communities.

Year 3 Progress: Data collection and analysis related to the role of food hubs in the grocery supply chain and the factors that contribute to the creation of collaborative farmer-grocery supply chains is complete and manuscripts are in draft form.

Year 4 Planned Activity: Publish results of the above work in peer reviewed journals. As a complement to the planned training resources and workshops on post-harvest handling (to build farmer capacity to sell into intermediated channels and to increase income), conduct an economic analysis of the on-farm and supply chain returns to investments in post-harvest handling infrastructure (i.e., mobile cooling units). Additionally, work with partner produce wholesale-distributors and farmers to identify high-value specialty products that could enter food service supply chains.

3. Creation of equal-status network ties and collaborative efforts among project participants.

Project Partner Meetings and Other Means for Group Networking and Information Exchange

Year 1 Reported Progress: An all-partner facilitated kickoff meeting was held in December 2012. A project website (ncgrowingtoghether.org) was released in August 2013. Monthly NCGT Newsletters are distributed to all partners and available to the public.

Year 2 Planned Activity: Hold an all-partner meeting for review of project progress in December, 2013 plus two additional all-partner meetings each year for information sharing and networking.

Year 2 Progress: All-partner meeting held at partner Fort Bragg military base in December 2013 (68 attendees). A first-ever locally sourced lunch was served to the group as procured and prepared by a Fort Bragg Moral, Welfare, and Recreation (MWR) chef. Site visit and open discussion with partner US Foods and its category managers held for participants of the national Food Hub conference in Raleigh in March 2014 (46). Site visits to Grocery Model warehouse distributor held for food hub partners (16); Site visit to Military Model produce distributor Foster-Caviness held for Extension partners (4); Site visit to Grocery Model store held in conjunction with regional grower meeting in February 2013 (12). Research Symposium for partners held in April 2014 (52). Food Hub Information Exchange for partners and public held in May 2014 (48). Monthly NCGT Newsletters disseminated to existing listserve and through the NC Extension Agent listserve.

Combined Year1-Year2 Evaluation: The number of informational meetings for all partners (and others) increased from 1 in Project Year 1 to three in Project Year 2, with additional site visits for some partners increasing from 0 in Project Year 1 to 4 in Project Year 2.

Comment: All site visits have taken partners and others within the mainstream market domain (e.g., warehouse and store visits). To promote equal status ties staff should bring mainstream market participants into the local food domain (farm visits, niche meat processor site visits, etc). Such farm site visits were attempted in 2014 with Grocery Model store managers but managers’ time constraints did not permit travel on-site. Instead food hub managers and farmer-vendors spoke with grocery managers and merchandizers at a regional meeting.
Year 3 Planned Activity: Expand networking and engagement activities to include more events that bring mainstream market participants into the local food domain (farm visits, small processor site visits, etc.) in order to support equal-status network ties among partners. Provide training opportunities that equally inform local and mainstream partners, for example, the planned produce quality training for food hub management and grocery store regional managers.

Year 3 Progress: The annual project meeting was held (52) and feedback from partners solicited. A full-day GAPs workshop and full-day post-harvest handling workshop (XX) included farmers and the produce category manager of Lowes Foods warehouse distribution center and the chain’s local food purchasing representative. Monthly NCGT Newsletters disseminated to existing listserve and through the NC Extension Agent listserve.

Year 4 Planned Activities: Hold annual meeting in Spring of Year 4; continued distribution of monthly NCGT Newsletters; Fall 2016 conference for MBA students and others around the theme of Sustainable Local Food Supply Chains.

Establish Multi-Partner Work Teams for Value Chain Work

Year 1 Reported Progress: Work teams were established and these were designed to include multiple project participants. Four multi-partner advisory teams met to provide guidance for project work on supply chain development: Produce Team, Meat Team, Seafood Team, Dairy Team. A Consumer Team meets quarterly to provide advice on consumer-demand based research and development activities. A Military Procurement Team meets bi-annually to advise project staff on supporting the movement of local food through distributors or directly to Fort Bragg dining facilities and commissaries.

Year 2 Planned Activity: Continued quarterly and biannual meetings and translation of partner guidance into action.

Year 2 Progress: Additional partners engaged to work with the project: North Carolina Military Business Center (to generate informational materials for potential vendors to understand how to engage with the military procurement system); Fayetteville State University (to work on training programs for farmers in areas near Fort Bragg and support development of the area farmer network); Cornucopia, Inc. (a small food distribution company to understand these entities place in bridging the small-mainstream divide). Quarterly meetings for produce and consumer team continued. Meat team and seafood teams meet approximately biannually in conjunction with other meetings (NC Choices staff meetings for meat; NC Catch meetings for Seafood). This does not reflect lack of engagement, but rather increased one-on-one interaction (with seafood, as a way to engage this new sector) and more reliance on electronic forms of communication (with meat, as the sector is well-established and working together in several ongoing projects).

Combined Year1-Year2 Evaluation: Team meetings among staff and academic, extension, and non-profit partners continue, though often in an ad hoc fashion (teams may be meeting about a specific topic, e.g., a dairy publication on value-added products or meat processing site tour, and at that time discuss more general dairy and meat supply chain needs). These staff and partners have become the assumed voice for producers. While these individuals have deep knowledge of the situation of producers, project staff should reintegrate producer voices directly into value chain discussions.

Year 3 Planned Activity: Offer honorarium for producers to attend the annual partner meeting in January and hold breakout sessions with these groups to gain insight from producers.
Year 3 Progress: Had eight producer representatives attend the annual meeting and participate with attendees in giving concrete feedback and specific suggestions on project activities.

Year 4 Progress: Continue with honorarium support for producers to attend the annual meeting, continue to connect with growers for feedback on project components. Support business extension associate to do economic/business analysis with niche meat producers and value-added dairy producers.

Annual Strategy Meetings with Grocery Model and Military Model Partners

Year 1 Reported Progress: “Kickoff” meetings with upper management at each of the mainstream market partners (Lowes Foods, Foster-Caviness, US Foods, Fort Bragg contractors) were held with project staff to confirm short-and long-term goals for joint work between the project and these partners, and to identify specific project partner staff for supply chain development discussions during the grant period. Contact continues among these identified partners and project staff.

Year 2 Planned Activity: Project staff continue to work in close collaboration with mainstream partners to track progress and challenges over time.

Year 2 Progress: Annual strategy meetings held with mainstream partners Lowes Foods, Foster-Caviness, and US Foods. Fort Bragg dining service contractors declined a meeting. Follow-up on agreed upon activities partially successful and depended upon the degree of communication with and commitment exhibited by the mainstream partner. In this regard Grocery Model planned activities have been quite successful (all in process, many achieved); Military Model efforts with the regional produce distributor have been partially successful (some in process, a few achieved); Military Model efforts with the broadline distributor have been minimally successful (one in process, one achieved), partially because of the merger of partner US Foods and Sysco which has diverted attention and energy. Planned structural changes in Fort Bragg dining services (e.g., change in menu selections to reflect local seasonality) were tabled as requested by the contractor personnel who manage these services. We are currently seeking additional ways of engagement with this sector. Fort Bragg Military, Welfare, and Recreation services have been open to engagement, resulting in our partnering with them to develop a farmers market located on base premises.

Combined Year1-Year2 Evaluation Metric: Annual meetings were held with each mainstream partner excluding Fort Bragg. MDI (the Lowes Foods distributor) has become more engaged with the project in Year 2. Suggestion is to hold an annual meeting with MDI or combined MDI/Lowes (in addition to Lowes only). Finding another mechanism to increase local foods within the dining services beyond current contractor personnel needs to be developed. Work with Fort Bragg dining services have been suspended by base personnel. Work can continue with Fort Bragg MWR contractors.

Year 3 Planned Activity: Hold annual strategy meetings with each mainstream partner (Lowes, US Foods, Foster-Caviness) and add an MDI meeting. Hold annual meeting with Fort Bragg MWR office. Engage Fort Bragg and US Military leadership in developing an alternative mechanism to increase procurement of local products into base dining services. Project staff will followup with each objective as identified in these meetings with regular reporting to project management team.

Year 3 Progress: Meetings were held between project staff and the grocery partner to plan strategies for bringing local product into the produce, meat/seafood, and dairy supply chains. Fort Bragg has disengaged from the project and an annual meeting was not held. Meetings were held with food
distributors—Foster-Caviness, Southern Foods, FreshPoint, Sysco, to discuss overlapping interests and alignment of activities to source local products.

Year 4 Planned Activity: Continued engagement with partners to build on shared interests in increasing the volume of locally sourced products.

Objective 2. Address identified supply-chain constraints and research effectiveness of interventions

Desired outcomes (from the original grant Logic Model):

1. Increase in NC producers who are GAPs certified

Year 1 Reported Progress: This outcome, and associated activities, was identified by the co-PIs during the writing of the original grant as a means by which to qualify small and mid-sized producers, for whom the cost of achieving GAPs certification is often out of reach, to work with the mainstream market grant partners. However, through the networked interactions between staff, mainstream market buyers, and producers, the buyers for Lowes Foods and Foster-Caviness have relaxed the GAPs certification requirement in lieu of a food safety checklist (contained in the Farmer Guides provided for each entity on the NCCT project website) and a farm visit.

Year 2 Planned Activity: Based on the findings from Year 1 that mainstream buyers are most concerned with establishing that basic food safety guidelines are being followed by producers, the project team has formed a Food Safety work group to do the following: (1) Fund partner Carolina Farm Stewardship Association to conduct group workshops that guide farmers currently working with the mainstream market buyers through the writing of a full food safety manual and to conduct mock audits of farms to ready these for GAPs certification, if they so choose (2) Provide peer-to-peer learning opportunities by having farmers visit model GAPs-certified farms (3) Connect farmers to existing resources that provide cost-share for GAPs audits (4) Build the capacity of Cooperative Extension Agents to deliver group workshops and mock audits by funding a training program designed by NCSU Food Safety scientists and by providing training and travel funding through salary release to one Extension Agent per district (five total) for the next two years of the grant.

Year 2 Progress: Conducted four two-day workshops for 85 producers; Conducted 8 one-on-one on-farm mock audits; with project support NC Cooperative Extension is hiring (position advertised in Sept 2014) a new NCSU regional Food Safety Extension Agent to provide food safety training support for Project Years 3-4.

Combined Year1-Year2 Evaluation: Original projections of 40 new GAP certified farmers per year not realized. Explanation for this lies less in availability of training and funding – both training and cost-shares were available throughout 2013-2014 -- than the cost/benefit calculations of small farmers: without solid, low-risk markets that require GAPs certification, farmers are unwilling to invest time/energy in the process even if training and cost-shares are available. NCGT partner Lowes Foods does not yet require GAPs certification. The NCGT partners that require certification (Foster-Caviness and US Foods/Sysco for any produce entering Fort Bragg) are not yet purchasing enough local product from the small farmers we are working to support (due to the transactions costs of dealing with numerous smaller farmers) to warrant the farmers getting certified. Suggestion is to continue to build food safety knowledge and readiness among small farmers in preparation for growth in demand and/or legislation becomes implemented requiring GAPs certification.
Year 3 Planned Activity: Conduct six two-day food safety workshops for an estimated 120 producers; Conduct 8+ on-farm mock audits in partnership with CFSA and additional food safety support through the NCGT funded food safety agent; develop and deliver a train-the-trainer food safety curriculum for extension agents including a distance education option. Build relationships between GAPs certified farmers (or those with the capacity/willingness to invest in GAPs certification) and likely buyers, both partner-buyers and others. Provide support for CFSA work with NCGT partner food hubs to develop a Group GAPs program that has the potential to lower costs of becoming certified and maintaining certification over time.

Year 3 Progress: Conducted nine GAPs training workshop (through Dec 14, 2015) with total of 126 growers trained (includes 4 workshops with anticipated 15 per workshop, Oct-Dec 14, 2015). Sponsored six Produce Food Safety Agent Training Series sessions to familiarize extension agents with upcoming FSMA rules and with an online course that gives more specifics on food safety for produce growers. Partner NCSU has completed a Distance Education course on food safety for farmers.

Year 4 Planned Activity: Conduct six two-day food safety workshops for an estimated 120 producers; Conduct 10 on-farm mock audits and refer additional GAP workshop participants to the Carolina Farm Stewardship Association, which has a separate grant to do 30+ mock audits/risk assessments in 2016. Sponsor delivery of a train-the-trainer food safety curriculum to extension agents and to farmers (both on-line programs were developed in Year 3). Build relationships between GAPs certified farmers (or those with the capacity/willingness to invest in GAPs certification) and likely buyers, both partner-buyers and others. Facilitate connections between CFSA and NCGT partner-buyers to facilitate adoption of Group GAPs standards.

2. Increase in NC producers and agricultural educators knowledge of GAPs and institutional market standards as required by Fort Bragg (and its prime vendors) and Lowes Foods.

Expansion of this sub-objective for Year 2 Progress and Year 3 Planned Activity: Increase in knowledge for producers, agricultural educators, and others on successful operation of food hubs; promotion of partner information exchange and collaboration through networking and site visits across the supply chain; training and tools for buyers to successfully procure and market local foods. Increase in buyer knowledge of farmer and fishermen challenges in predicting harvest/catch timing and harvest quantities.

Expansion of this sub-objective for Year 3 Progress and Year 4 Planned Activity: Include in this objective all capacity-building training for producers and agricultural educators on enhancing business operations (i.e., increasing the value of the product produced, lowering the costs of production) and improving vertical and horizontal collaboration across the supply chain (e.g., networking opportunities).

Year 1 Reported Progress: Between May and August three ‘Round the Table Buyer-Grower meetings were held between small and mid-scale produce farmers, partner buyers from Lowes Foods and Foster-Caviness, and project food hub partners. During these meetings partner buyers explained their food safety requirements and other procurement standards. Farmer Guides detailing this information have now been created by Lowes, Foster-Caviness, and food hub Feast Down East and are posted on the NCGT website (ncgrowingtogether.org). Two farm tours were held subsequent to the meetings for the buyers to visit farms for which owners had attended the grower-buyer meetings.

Year 2 Planned Activity: Work to establish a culture of food safety through grower training and capacity building among Cooperative Extension agents. Continue Buyer-Grower meetings and document the process by which Extension and other agricultural educators can hold Buyer-Grower meetings that bring small and mid-scale farmers together with mainstream market buyers and support these relationships.
between buyers and growers. Provide information on institutional market standards and working with mainstream market partners to Extension field staff at the annual Cooperative Extension meeting in November, 2013.

Year 2 Progress: Organized and facilitated the following with relevant partners: two buyer-grower networking meetings with combined attendance of 68; Grocery Model regional distribution center site visit for two food hubs (16); Grocery Model store site visit for regional growers conference (12); Peer to peer site visit of GAPs certified farms (49); Food Hub Information Exchange networking and presentations (48); Peer to Peer Meat Processor Roundtable with site visits to two processors (to occur 9/30). Created Produce Packaging and Specifications Guide for produce vendors; Held 7+ trainings/panel-presentations for niche meat producers to understand marketing to grocery buyers (100+); Presented on project goals/objectives to Extension agent audiences in 5 settings (200+); Created online resources for producers to connect with buyers including Warehouse Walkthrough, UPC/PLU guide and associated webinar (ncgrowingtogether.org/for-producers/).

Combined Year1-Year2 Evaluation: Buyer-grower meetings are well-received by producers and approximately ¼ of those attending have established vendor relationships with partners (most with Lowes Foods). These networking meetings may not be sustainable over the long-term, however, as buyers are unwilling to travel across the state to make connections with smaller farmers that represent relatively small amounts of product. Suggestion is to network buyers with food hubs and to increase the interaction between groups of growers, small scale distributors who can connect the aggregated product from these groups, and the buyer-partners. Suggestion is to host these meetings in association with conferences where high number of growers attend. Also expand work to dairy and seafood.

Year 3 Planned Activity: Continued support of NC food hubs to concretely include the following: summer interns through the NCGT Summer Food Business Internship Program; NCGT staff work with the Wake Forest Community Law Center and a law student team to identify best legal structures for food hub and grower-cooperative operations; continued staff support to network hub management with partner-buyers and new support to connect hubs with non-partner buyers (other wholesalers and retailers); training for extension agents working with food hubs; research on feasibility of new hub operations including evaluation of ongoing CSA-style box at Lowes Foods and feasibility of frozen bagged local produce. Increase knowledge-base for selling into the military by creating a decision-tree and visual depiction of the procurement process at the Department of Defense with specific information and contacts to inform individual producers (and food hubs) on how they can become vendors to military bases.

Year 3 Progress:

For producers:
Held three produce post-harvest handling workshops (52 participants) and completed one video on using post-harvest handling techniques to improve product quality, and one video on proper packing for wholesale buyers; as reported above, held nine GAPs training workshop (through Dec 14, 2015) with total of 126 growers trained (includes 4 workshops with anticipated 15 per workshop, Oct-Dec 14, 2015). Held 12 workshops related to niche meat production (beef, pork, poultry, lamb) with estimated 172 attendees (includes estimated attendance through Oct 12-13 events); conducted ‘how to sell to wholesaler’ panel events at the annual NC Catch conference (seafood, 35 attendees), Carolina Meat Conference (attendees included in estimate, above); Sustainable Agriculture Conference (in Nov 2015, est 25 attendees), Small-Scale Egg Production workshop (on Sept 25, est 25 attendees). Conducted business process research to understand viability of on-farm dairy processing and shared findings via an online
spreadsheet tool; created extension fact sheets on how to successfully sell through direct-store-delivery eggs, milk, and meat products to grocery stores (one published, two in review).

For producers and buyers networking:
Held two produce grower-buyer “speed-networking” meetings between 15 buyers and 20+ growers and created toolkit for others to organize/execute successful grower-buyer events; organized 2 tours for a food service buyer to meet with seafood producers (5 stops); facilitated 4 on-farm meetings between food service buyers and dairy and cultured seafood producers; facilitated small-scale cheese distributors’ presentation to food service sales force at a major food wholesalers, led to setup as a vendor and sales of NC cheeses into this supply chain; facilitated 10+ direct connections between buyers and individual meat and dairy producers.

For agricultural educators:
Held six Produce Food Safety Agent Training Series sessions to familiarize extension agents with upcoming FSMA rules and with an online course that gives more specifics on food safety for produce growers. Partner NCSU has completed a Distance Education course on food safety for farmers; organized 3 tours for extension agents to a meat processing facility (15), food hub (13), and partner grocery store (15); Held workshops in conjunction with conferences and classes and webinars for extension educators to learn about addressing food access through local food systems (57), working with supermarkets on extension programming (11), and applying extension resources to build local food systems (119). Created toolkit for ag educators to use to conduct successful grower-buyer speed-networking events.

For the general public and food system groups:
Project Director shared goals and outcomes of the project with state and national audiences (est 855 attendees).

Year 4 Planned Activity: Continued capacity-building workshops for produce, meat, dairy, and seafood/aquaculture producers. Focus is on enhancing quality and lowering cost for increased sales to wholesalers, but with applicability to any market channel. Continued networking between producers and buyers, both in one-on-one and group and tour situations. Translation of project findings on capacity building and networking with buyers into extension and ag educator programming materials (fact sheets, powerpoints, enterprise budgets, spreadsheet tools).

3. Increase in NC producers who supply foods to Fort Bragg and Lowes Foods

Grocery Model – Lowes Foods and distributor Merchants Distributors, Inc.

Year 1 Reported Progress Lowes Foods tripled the value of local produce moving through its direct-to-store supply chains, achieved by signing up an additional 30 small and mid-scale producers. During the first project year Lowes Foods leadership have become willing to expand local sourcing from produce to other items, starting with trials to select stores. In September 2013, four Lowes Foods Stores will pilot direct-to-store niche pork products. One of the vendors is a meat food hub serving 40 niche meat producers in NC, the other is a mid-sized pork producer who sells both unprocessed cuts and value-added products.

Year 2 Planned Activity: Institutionalize the process by which Lowes store managers source directly from vendors for produce as well as meat, seafood, and dairy. Develop general process documents that can be distributed to other grocery retailers in the state and nation. Determine how procurement practices at
Lowes distributor, MDI, could be altered to bring more locally sourced products into the warehouse-to-store supply chain.

Year 2 Progress: Lowes Foods increased by 50% the value of local produce moving through its direct-to-store supply chains, achieved by signing up an additional 21 small and mid-scale producers, ordering a broader array of produce from existing DSD vendors, and instituting a food-hub-to-store summer CSA box program (5 hubs delivering 15 weekly boxes to a total of 35 stores). Project research staff evaluated the meat DSD pilots and lessons learned. Recommendations for selling in the retail grocery market have been disseminated to niche meat producer audiences on 7 occasions to 360 producers and on 9 occasions to producer farmers with a combined audience of 312. The process and supporting documents to establish the sale of meat and dairy products directly from producers or small-scale distributors to individual stores was completed and approved vendor setup documents (to establish vendors at the individual store level) placed on-line and distributed to store managers. The first dairy (local milk) DSD relationship and store delivery between a small dairy and individual store was accomplished. A pilot egg delivery relationship between a local farm and 5 stores was initiated in September, 2014.

Combined Year1-Year2 Evaluation: Substantial progress was made for produce from local farms, with nearly a 6-fold increase from project baseline in the quantity of produce from small/mid-sized growers entering the grocery model supply chain. There was growth both in the quantity of product and quantity of vendors, and in the diversity of products—from a heavy reliance on just peaches and strawberries in 2012, to an array of (15+ types) fruits and vegetables in 2014. These findings have been shared in several conference presentations but need to be more widely shared through academic and trade publications. A pilot was completed for DSD niche meat and the findings used to inform additional piloted efforts for building niche meat supply chains into grocery retailers, and for recommendations made via presentations to producer groups. These piloted findings and associated recommendations should be disseminated to the public and more widely shared through academic and trade publications. The dairy (milk) pilot should be evaluated and findings and recommendations shared with the public.

Year 3 Planned Activity: Continue to facilitate supply chain relationships between mainstream buyers, small-scale distributors and aggregator/distributors (food hubs), and individual producers through networking and site visits. Specifically: support continued expansion of produce DSD program by developing a produce manager procurement checklist; creating a store manager and food hub manager training on produce quality specifications; and field and then analyze and distribute the results of a study of produce manager and farmer-vendor relationships (e.g., perceptions of relationship quality). Creation and support for processes (practices, guiding documents) that support institutionalization of these supply chains (e.g., current development of a grocery-store manager produce procurement checklist). Evaluate the summer Lowes Foods CSA box program. Evaluate the pilot dairy deliveries to Lowes and US Foods. Disseminate findings from the grocery model produce, meat, and dairy supply chain work to the public via academic and trade publications.

Year 3 Progress: Disseminated findings to producers, ag educators, and the general public as detailed above. Expanded networking to include other food distributor partners in addition to Foster-Caviness and US Foods, in order to supply markets for producers ready to sell into wholesale markets. Grocery partner Lowes expanded procurement of local milk and eggs and is seeking to have local offerings for both products in each of its six NC districts. Project has connected food distributor partners to cheese, seafood, and niche meat producers. Limited success in these areas due to differences in price between local/niche and commodity offerings. Grocery wholesale partner hired a local specialist to recruit local growers, works in partnership with project grocery liaison.
Year 4 Planned Activities: Continued work with Lowes and MDI to connect produce, meat, seafood, and dairy producers into direct-store-delivery and warehouse distribution chains.

Military Model – Fort Bragg and distributors Foster-Caviness and US Foods

Year 1 Reported Progress: Project kickoff meetings held with Fort Bragg, Foster-Caviness, and US Foods. Initial strategies defined.

Year 2 Planned Activity: Determine the feasibility of linking Foster-Caviness to food hubs located near Fort Bragg, both to allow these hubs to aggregate from smaller producers from which the distributor currently sources, and to obviate the need for local produce to travel to the distribution center in Greensboro and then back to Fort Bragg (which adds unnecessary cost to local items).

Year 2 Progress: Project annual meetings were held with partners Foster-Caviness and US Foods. A meeting could not be arranged with Fort Bragg due to reluctance of dining contractors to participate. The NCGT Wholesaler Liaison worked with Foster-Caviness (FC) buyers to identify particular crops demanded by FC, identified near-base sources of these crops, and worked with these farmers to build food safety plans and achieve GAPs certification (as required by the FC and the base). FC plans to purchase fall crops from farmers who are part of an 11-farm Farmer Network in the Fort Bragg area; for FC the percentage of produce sourced from NC growers in 2014 was 14%, however a size distribution of the farms is not known. This was the first year that FC began tracking local product. A feasibility study was completed to identify the optimal location and costs/returns to a produce consolidation center located near Fort Bragg that could service FC. The optimal site identified is an existing farm that already supplies F-C. Negotiations continue on terms for linking producers, the proposed farm/consolidator, and Foster-Caviness. A relationship was facilitated by NGCT staff between three artisan cheese producers, a small scale project-partner distributor (Cornucopia), and US Foods, the latter of which took its first shipment of NC artisan cheeses in August, 2014. Fort Bragg MWR is aware of its ability to now source local NC cheeses through their prime vendor US Foods. NCGT staff working with MWR staff resulted in a Fort Bragg farmers market serving area farmers. This was an important milestone. Department of Defense announces that it will add a geographic origin field to its STORES catalog so that those ordering products can be aware of the source. This is another important milestone.

Combined Year1-Year2 Evaluation: There has been virtually no progress to bring source-identified meat, seafood, dairy, or produce into the Fort Bragg supply chain. This can be attributed to the fact that the Base does not specifically request local foods for the simple reason that they are unable to identify in the current ordering system what items are “local.” The planned Department of Defense level change in the STORES catalog to add a geographic field to each product will make it possible for those ordering product to know its geographic source. It appears unlikely (at this time) that those ordering food will be able to select local items if they are costlier than a comparative non-local item. Local items from small and mid-scale farmers will almost always be more expensive than items from large-scale farmers (local or non-local) due to higher transaction costs at the prime vendor level. Therefore, it is recommended that the project work at the supply end to lower the cost of local product (by promoting greater efficiencies in production or transportation to the prime vendor, for example). At the same time, the project should continue to explore means by which base menus could be changed to reflect local seasonality, and work to incentivize dining services on base to maximize their use of produce substitution—substituting a local fresh item (peaches) for a non-local fresh or canned item (pineapple). Project should also consider exploring working with partners for national level changes that would increase the possibility of procurement on the base.
Year 3 Planned Activity: Continue to facilitate supply chain relationships between the prime vendors (Foster Caviness & US Foods—now US Foods/Sysco) to small-scale distributors and aggregator/distributors (food hubs), and individual producers through networking and site visits. Included in this is organizational and training support for the farmer’s network near Fort Bragg, with the NCGT Wholesaler Liaison supporting this group (and other farmers’) connection to Foster Caviness. Facilitate meetings/site visits between farmers/farmer-groups and Foster-Caviness. Support farmers in the near-base region with GAPs and training on quality and packaging specifications. Grow the volume of products moving through Cornucopia into US Foods/Sysco so that these items can enter Fort Bragg. Increase information for supply chain partners through: (1) creation of a decision-tree and process map to clarify to vendors the different pathways for entering the Fort Bragg supply chain and (2) creation of a process document to explain to two audiences—military base personnel, and potential farmers market partners—how to establish a farmers market on a military base.

Year 3 Progress: Focused military-related work on the prime vendor for other military installations in NC—Sysco has been working with the Food and Fuel 4 the Forces program at Camp Lejeune to bring NC-produced items into the Sodexo-operated food service operations at Camp Lejeune, and has expressed interest in local seafood. We are using our seafood producer contacts to support this effort. Provided information to Wholesome Wave, which has been contracted by USDA AMS to create a document on setting up farmers markets on military bases.

Year 4 Plans: Work with distributors (Sysco, Foster-Caviness) to bring local producers into their supply chains which connect to dining services at multiple NC military installations.

4. Establish local food supply chain course at the North Carolina State Poole School of Management  
Added in Year 2 Report—section on Fellow, Interns, and Apprentices

Supply Chain Course

Year 1 Reported Progress: The course is on the university schedule for Spring, 2014.

Year 2 Planned Activity: The course will be a mechanism toward achieving project goals by serving as a means to network students in business, agroecology, industrial design, and other fields with project partners for knowledge exchange. The course will bring in partners as speakers and students will work in groups to address partner needs.

Year 2 Progress: Course held in Spring 2014 with 18 students: 14 MBAs, 2 graduate students, 2 undergraduate. 20+ partners engaged with students as classroom speakers, at a site visit, and through 6 team projects that worked on partner/project objectives. Team results shared with partners at an April research symposium and online (http://www.ncgrowingtogether.org/research/). Project topics included novel logistics solutions, a resource mapping tool for food hubs, and seafood market readiness assessment. Presentation on the course given at the annual Sustainable Agriculture Education Conference, August, 2014.

Combined Year1-Year2 Evaluation: Course successfully administered and student projects and findings well-received by partners, building momentum for future positive interactions between students (apprentices or researchers) and partner entities.

Year 3 Plans: NCSU course to be repeated in Year 4; NC A&T University to offer local food supply chain course in Spring 2015 (Year 3).
Year 3 Progress: NCA&T did not offer a local food supply chain course, but connections have been made between the NCA&T Dept of Industrial Engineering and the project, and a student is currently working on a farm-to-grocery logistics optimization project. NCSU local food supply chain course has been scheduled for Spring 2016.

Year 4 Plans: Hold NCSU local food supply chain course in Spring 2016. A process document will be created as a guide for an MBA practicum class on local food supply chains. Continue work with NCA&T Dept of Industrial engineering on produce (and potentially other product) logistics optimization projects.

**Fellows, Interns, and Apprentices (subsection added for Year 2 Report)**

Year 2 Progress: Two MBA Supply Chain Fellows conducted research during the 2013-2014 academic year. One focused on the seafood supply chain (see outputs of the work by Jessica Newsome, here: [http://www.ncgrowingtogether.org/research/](http://www.ncgrowingtogether.org/research/)); the other focused on the produce supply chain (see outputs of the work of Sebastian Naskaris, here: [http://www.ncgrowingtogether.org/research/](http://www.ncgrowingtogether.org/research/)). Two Food Hub Apprentices worked at partner food hubs, collected food hub data, and assisted in organizing the Food Hub Information Exchange in May, 2014 (48 attendees). Two summer 2014 Lowes Foods interns worked to make connections and gather marketing materials (photos, biographies) of farmer-vendors for store use and worked with individual stores to bring local food related programming to Lowes “community table” and “farmer day” events. Three MBA student teams engaged through the Supply Chain Resource Cooperative (2 teams) and the Consumer Innovation Consortium (1 team) to support project efforts in the military and grocery model.

Combined Year1-Year2 Evaluation: The 2014 Spring course allowed the supply chain fellows and agroecology students a productive way to interact and learn from each other, both in the class setting and through the involvement of the fellows in the student projects. Because there is no course in the 2014-2015 school year, the project needs to bring interns, apprentices, and fellows together for shared learning in another venue. The team projects conducted through the course impacted more students than supporting individual supply chain fellows.

Year 3 Planned Activity: The project will institute a formal NCGT Local Food Supply Chains internship for a cohort of 6-8 students for an 8 week period in the summer of 2015. Interns will meet at the beginning and end of their experiences and have an opportunity to visit each other’s internship sites for shared learning. The project is funding 5 MBA student teams for research on both supply chain operations and marketing in lieu of funding individual supply chain fellows.

Year 3 Progress: Executed the NCGT Local Food Supply chains apprenticeship with 7 apprentices placed in 8-week paid positions with project partners. Funded 5 MBA supply chain teams for research on partner supply chain operations and one supply chain scholar. Information on the apprenticeship summarized in a document to be used for outreach for summer 2016. Results of supply chain consultancies housed on the Research page of the NCGT website.

Year 4 Plans: Up to twelve apprenticeships will be offered through the summer 2016 Local Food Supply Chain apprenticeship. A process document on successfully designing and executing a summer apprenticeship program linking students with food supply chain partners will be created and shared. An MBA-focused ‘Sustainable Food Supply Chain Conference’ will be held in December, 2016, in partnership with the Sustainability Initiative and student Net Impact Chapter at Poole.
5. Progressively enhanced knowledge base to inform project efforts
This section folded into other subsections

6. Re-use of food “waste” for value-added products; additional value added work
Added in Year 2 Progress: Include in this section all work on value-added products

**Produce for Food Manufacturing**

Year 1 reported Progress: An infrastructure inventory is nearly complete (data release on the NCGT website scheduled for November, 2013), which includes a current mapped listing of fruit and vegetable processors. This will be used to investigate the feasibility of using NC produce seconds in these facilities.

Year 2 Planned Activity: Design and implement a survey of fruit and vegetable processors to determine their sources of product and investigate the feasibility of utilizing NC product for sales in NC markets.

Year 2 Progress: Fruit and vegetable food manufacturers survey prototype in process with final to be fielded in Sept/Oct 2013.

Combined Year1-Year2 Evaluation: Delay in creation and fielding of food manufacturers survey due to loss of research intern.

Year 3 Planned Activity: Complete survey, analyze results, report findings, seek supply chain connections between local growers and local food manufacturers.

Year 3 Progress/Year 4 Planned Activity: At the suggestion of project partner NC Dept of Ag and Consumer Services, this activity was discontinued. A state-wide Food Processing Initiative began in 2014 and this initiative may include similar work.

**Produce for Vermi-composting**

Year 1 Progress: Foster-Caviness has doubled the size of its vermicomposting operation, begun selling worm casings, and will present the results of its work at the 14th Annual Vermiculture Conference in Raleigh, NC, in November 2013. Rhonda Sherman, also presented her work with Foster-Caviness at the 27th annual BioCycle Conference in April 2013.

Year 2 Planned Activity: Create an informational document to inform other produce wholesalers of the potential to utilize food waste to create a value-added product.

Year 2 Progress: Partner Foster-Caviness reconfigured its vermicomposting process and facility to one that was deemed not workable (worm health and economics) by composting expert and partner Dr. Rhonda Sherman. The system as redesigned was considered unworthy for information sharing to other produce wholesalers so we have dropped this aspect of the project. If another suitable system is found to use as a model, we will go forward with this aspect of the work.

Combined Year1-Year2 Evaluation: Unable to achieve the original deliverable if based on work with Foster-Caviness.
Year 3 Planned Activity: None, activity discontinued for Year 3. May be brought back on as an activity in Year 4 if a suitable partner is identified.

Year 4 Planned Activity: Potentially construct an enterprise budget to define investment and operating costs and returns for a vermicomposting unit that could be added as an on-farm enterprise. Create after assessing producer interest.

**Dairy Value-added Work (new for Year 3)**

Year 3 Planned Activity: Create value-added fact-sheet to assist small-scale dairies and cheese-makers in entering retail markets (include food safety information, labeling, packaging, making contact with buyers, etc).

Year 3 Progress: Value-added fact sheet to assist small-scale producers of bottled milk to enter grocery retail markets is under review. Created user-friendly spreadsheet for conventional dairies to use to estimate costs and returns of adding an on-farm bottling enterprise. Held HAACP workshop for three farmstead creameries in conjunction with a butchery HAACP workshop to understand whether or not the project could sponsor these as combined workshops in Year 4.

Year 4 Planned Activity: Possibly offer HAACP workshops for dairy producers, based on findings from Year 3 fall workshop. Act as a facilitator to link producers with value-added products to partner sales channels.

**Seafood Value-added Work (new for Year 3)**

Year 3 Planned Activity: Create “product pitch” fact-sheet to assist small-scale seafood processor/value-added manufacturers in entering retail markets (making contact with buyers and conducting a successful ‘pitch’ meeting).

Year 3 Progress: Created an Adding Value for Local Food factsheet, reviews completed, moving toward publishing as an extension fact sheet. Includes seafood value added items as well as any other value added product.

Year 4 Planned Activity: Act as a facilitator to link producers with value-added products to partner sales channels.

**Objective 3. Address long-term structural conditions which limit increasing local foods in NC institutional markets**

Desired outcomes (from the original grant Logic Model):

1. **Retailers accept “Whole Farm” GAP certification.**

Year 1 Reported Progress: N/A

Year 2 Planned Activity: Project partner Carolina Farm Stewardship Association, staff and a hired consultant will investigate the potential for “group audits,” similar to those currently being examined by the Wallace Center, for use by food hubs. These group audits effectively reduce the cost of GAPs
certification for producers, while supporting a culture of food safety among a group of inter-related producers (i.e., those connected to a food hub).

Year 2 Progress: Project partner Carolina Farm Stewardship Association received funding to investigate the process of implementing Group GAPs systems at three North Carolina food hubs. Project term spans July 2014 – December 2015.

Combined Year1-Year2 Evaluation: “Group GAPs” project in process as planned.

Year 3 Planned Activity: Work with partner Carolina Farm Stewardship Association and partner food hubs to develop Group GAPs model.

Year 3 Progress: Carolina Farm Stewardship Association has nearing completion of GAP standards. NCGT facilitates connections between CFSA and our partner wholesalers for discussion of these standards.

Year 4 Planned Activity: Facilitates connections between CFSA and our partner wholesalers for discussion of Group GAP standards.

2. More NC local food eligible for military and grocery purchase (due to changes in standards or procurement policies)

Year 1 Reported Progress: More NC local food became eligible for grocery purchase because of the increased supplies of local produce moving direct-to-store. The distributor for the grocery was unable to change procurement practices initially to bring more locally sourced products into the warehouse distribution supply chain. However, this constraint opened the door for development of a successful and expanding Direct Store Delivery model, with the number of new small and mid-sized farmer-vendors and product value increasing three-fold between 2012 and 2013. For the military model, Foster-Caviness made some new local grower connections via the project but products from these producers have not yet entered Fort Bragg.

Year 2 Planned Activity: Fine-tune and institutionalize the process by which individual grocery store managers are able to connect with and form ongoing supply chain relationships with local farmers. Address structural issues that restrict store managers ability to work autonomously with farmers (e.g., state-wide advertisements and pricing practices that prevent individual stores from working flexibly with local producers). Two funded Supply Chain Fellows from the Poole School of Management Supply Chain Resource Cooperative will work closely with buyers at the mainstream distribution entities to analyze how sourcing practices and procurement standards are structured and how these might be altered to bring more NC local product into the warehouse-to-store supply chain.

Year 2 Progress: Processes at the grocery store level to work with farmer-vendors were solidified (in documents for vendor-setup) and similar processes established for niche meat and local dairy vendors. Work by the Supply Chain Fellows and by the project teams associated with the Local Foods Supply Chain Class at NC State University identified and examined the feasibility of two alternative approaches to moving source-identified product through warehouse distributors at a lower cost than currently (presentations of these appear as the “local to local” model and “consolidation center” model, and manuscripts for both appear are under review for publication: http://www.ncgrowingtogether.org/research/). Training programs to assist farmers in writing food safety plans and available cost shares to cover the costs of GAPs audits allowed a number of farmers to become certified, and thus eligible to enter Fort Bragg, but transaction costs from smaller farms to the prime vendors (Foster-Caviness and US Foods)
and lack of demand from source-identified product by base dining and MWR facilities is still preventing any product from moving on base.

Combined Year1-Year2 Evaluation: Progress was made on structural change at the grocery model to change the procurement policies to allow a wider range of locally produce produce to enter stores, and pilots for meat, dairy, and eggs are extending these processes to other items. For the military model the proposed addition of an origin field to products may result in a greater amount of selected local products at the base level.

Year 3 Planned Activity: Create a working group to analyze the prospect of instilling quality (size, appearance) standards at the store level and within the military system that are more suited for local products. Pilot these standards at the grocery partner. Examine the impact on farmer profitability and food waste of using these alternative standards. If the change in the military catalog is accomplished, examine changes in buying practices at Fort Bragg.

Year 3 Progress: Training and networking efforts with producers and buyers are detailed, above. In addition: Created NCSU/NCA&T working group on food waste, received NCSU funding for initial meetings with interested partners and for a trip to meet with USDA officials in Sept, submitted an AFRI proposal combining on-farm and supply chain research with the NCGT grocery and food service partners to identify quality-standard sources of waste and ways to mitigate this waste.

Year 4: Continued work with the NCSU/NCA&T working group on food waste to identify means to use produce screened-out due to size/shape standards in our partner supply chains. Continued training and networking efforts with producers and buyers as detailed, above.

3. "Best value" assessments enhance NC local food advantage

Year 1 Reported Progress: N/A

Year 2 Planned Activity: Project staff and a graduate student researcher will investigate the current status of "best value" as a procurement standard at military installations across the country and in the research literature, and develop and test a model for assessing the value of other local food attributes.

Year 2 Progress: Graduate student work concluded on a quantitative analysis of the factors leading to farmland loss.

Combined Year1-Year2 Evaluation Metric: The original goal of providing quantitative measurement of the value of "local product" as compared to “non-local product” has not yet been achieved.

Year 3 Planned Activity: Graduate student work disseminated in form of academic peer-reviewed economics publication and set of recommendations for military bases (and other entities) to slow farmland loss.

Year 3 Progress: Graduate student completed dissertation. Summary of work related to reasons for farm-land loss distributed on the NCGT website.

Year 4 Activity: Continue to look for points of intersection with military procurement and their prime vendors to add local origin as a source of value.
4. Increased sales of local foods  
*This section folded into other subsections*

**Objective 4.** Address demand-side mechanisms for increasing local food sales.

Desired outcomes (from the original grant Logic Model):

1. Increased local food sales and access of low-income groups to local food

Year 1 Reported Progress: Project staff have designed a research program (see point 2, below) that includes work to increase local food access in the grocery retailers “Just Save” stores that are designed for low income consumers.

Year 2 Planned Activity: Quantify local food sales and access in Just Save stores compared to the retailer’s higher-income oriented stores. Measure increases in sales and consumer interest at both types of stores in response to project demand-side interventions (see point 2, below).

Year 2 Progress: Delay in field work due to Grocery Model personnel turnover. Baseline customer intercepts fielded for social norms promotion. Baseline customer web surveys for local loyalty promotions (at 6 stores, 3 test and 3 control) complete. A Family and Consumer Science Extension Agent piloted a display and cooking demonstration for the *Cook Smart, Eat Smart Cooking School* during a Lowes Foods Local Day Celebration. Evaluation of the event was positive and provides a means by which agents can work with community members in retail grocery settings.

Combined Year1-Year2 Evaluation: Research objectives not achieved as planned yet due to personnel turnover. Appears project is on track and interventions are being fielded in test stores. Original narrative indicated more work to increase access to lower-income communities. Project should focus more effort on improving local food access in Just Save stores.

Year 3 Planned Activity: Implementation of three demand interventions (2 Lowes Foods, 1 Just Save) between Sept 15 and December 15 2014 with two week trials and two week washout periods. Pre and post customer web survey data and measures of local food purchases to be completed for each promotion. Data analysis in early 2015 to inform further demand-side analysis. Additional interview work will be conducted in “Just Save” stores to understand perceptions of availability and ability to access local foods. Explore means to bring Extension Service healthy cooking and eating programs into Just Save stores.

Year 3 Progress: Graduate student research on Just Save stores was conducted.

Year 4 Planned Activity: Analysis and dissemination of graduate student research on research in the Just Save stores (on perceptions of availability and access to local foods, and impact of interventions on produce purchases).

2. Increased local food demand

Year 1 Reported Progress: (Grocery Model Focus) The Consumer Team consists of NCGT project staff and food systems researchers (the latter through a subcontract to the UNC Center for Health Promotion and Disease Prevention). The goal, objectives, and strategies for this team match those of the overall project, but work at the consumer, rather that the production or intermediary distribution locations of the supply
chain. The Consumer Team in Year 1 worked collaboratively with our retail partner Lowes Foods to devise two studies that serve both the goals of the project and interests of the partner. Between May and September a team of graduate student researchers and project staff conducted a literature review of local food marketing efforts, and developed and implemented surveys in six Lowes Foods Stores to evaluate the stores practice of “Local Celebration Days” which feature local produce and “meet the farmer” opportunities. The output of this activity will be an assessment of the success of these events based on customer surveys and researcher observations across stores. This assessment will be provided to Lowes and, in a generalized form (without store names) to the public on the NC GT website upon completion (estimated for October, 2013). In addition to the above short-term evaluation activity and pending report, the team designed a “Local Loyalty” research program to be conducted in years 2 – 4. The objective of the research is to identify efficacious strategies for marketing local produce in chain groceries.

Year 2 Planned Activity: The Consumer Team will create user guides for grocery retailers that provide effective strategies for holding “Local Days” in retail settings. This guide and the literature review of local food marketing efforts will be made available to the public on the project website. The Local Loyalty research program will collect baseline data at the already identified six “test” stores and six matched control stores. Lowes has agreed to share store register (sales) data and permit additional questions to be embedded in existing online customer surveys. The output of this activity will be an assessment of the most efficacious strategies for marketing local produce, and in building community engagement around local food in retail settings. The Consumer Team will partner with county-based Family and Consumer Science Extension Service staff in order to integrate retail events into the ongoing activities of FCS agents. An anticipated output associated with this activity is a process guide for FCS agents in how to engage in community-based programs with retail grocers around local foods.

Year 2 Progress: A guide, “Holding Successful Meet the Farmer Events,” and a retailer guide “Authenticity and Success in Marketing Local,” was created and is now available here: http://www.ncgrowingtogether.org/for-buyers/. Personnel turnover at Lowes Foods delayed the implementation of the “local loyalty” interventions at stores. Partially due to this the number of stores was scaled back from 12 to 6 (3 test, 3 control). Baseline customer surveys for the 6 local loyalty program stores completed in August 2014; first of 3 planned interventions fielded September 1. Planned interventions: social norming; community economic development messaging; farmers market in-store merchandizing. Customer intercepts used in test stores to derive social norming messages. A Family and Consumer Science extension agent and local extension volunteers participated in a “Local Days” event at Lowes Foods to promote healthy eating and Extension’s Cook Smart, Eat Smart program. Extension considered the event a success and the results are being crafted into a ‘how to’ document for other FCS personnel. Project staff are working with local extension personnel to connect with Lowes Foods “community table” staff to bring healthy local food programming into stores on a regular basis.

Combined Year1-Year2 Evaluation: Summer 2013 work resulted in two online guides. Research objectives not achieved as planned due to personnel turnover beyond the project’s control. Appears project is on track and interventions are being fielded in fall/winter 2014-2015. Staff are successfully networking local extension staff with Lowes Foods personnel to bring healthy local food programs into stores.

Year 3 Planned Activity: Implementation of three demand interventions between Sept 15 and December 15 2014 with two week trials. Pre and post customer web survey data and measures of local food purchases to be completed for each promotion. Data analysis in early 2015 to inform further demand-side analysis. Complete ‘how to’ document on doing Cook Smart, Eat Smart programs in grocery retailers.
Continue networking extension service personnel and local stores to heighten emphasis on local food and healthy eating among store personnel and customers.

Year 3 Progress: Graduate student research on Just Save stores was conducted.

Year 4 Planned Activity: Analysis and dissemination of graduate student research on the Just Save stores (on perceptions of availability and access to local foods, and impact of interventions on produce purchases).

Year 1 Reported Progress (Military Model): The project team, in collaboration with the heads of the dining services and commissaries at Fort Bragg, have designed three objectives for building demand for local food on base and identified specific NCGT staff and Fort Bragg staff to work on these objectives.

Year 2 Activity: Work with partners to achieve the following objectives: (1) alter dining facilities menus to reflect NC seasonality (adjusting 30 day menus) to increase amounts of NC produce delivered by Bragg’s contracted distributor and NCGT partner Foster-Caviness (2) support Morale, Welfare and Recreation facilities (including catering) to recognize and add to their menus locally sourced items (produce, meat, dairy, seafood), including items that will be clearly identified as local in the US Foods catalog (project partner US Foods is the contracted food service distributor to these facilities) (3) identify the supply chain opportunities through which local producers can link to the base commissaries—either through the contracted supplier (not an NCGT partner) or direct-to-commissary.

Year 2 Progress: Staff and partners were unable to make any progress on changing Fort Bragg dining menus to reflect NC seasonality as these changes could not be made at the individual base level and there is no move at higher levels (that could be discovered) to make this institutional change. Local items in the US Foods catalog remain unidentified as to whether they are local or non-local products (grown/sourced from within NC). US Foods remains unable to quantify the amount of local product sold to Fort Bragg. Foster-Caviness implemented a tracking system to allow it to internally count NC Local product shipped to Fort Bragg. DoD announced the intention of adding a field in its STORES catalog that would indicate source, thus enabling those on base who place orders to specifically request “local” product from the prime vendors (e.g., NCGT project partners US Foods and Foster Caviness). This may supply impetus for US Foods to source-identify product. Staff worked with Fayetteville State University to establish a training program and organizational structure for a near-base farmer network. Staff worked with Military, Welfare and Recreation on base to establish first on-base farmers market. Establishment of a farmers market was seen as one of the few steps that could be taken to move locally grown product on base, even though this is outside of the “mainstream market” (prime vendor) system.

Combined Year1-Year2 Evaluation: Due to base turnover, lack of a project champion at Fort Bragg has hampered any efforts to increase demand for local source-identified foods by those on base who order product. Without this demand, prime vendors US Foods and Foster-Caviness are unwilling to incur the additional transaction costs involved with sourcing from small/mid-sized growers. Project staff focused efforts on building near-base supply of produce (through support for creation of a farmer network and associated training) and building general awareness of local foods on base via a farmers market.

Year 3 Planned Activity: Continue requests to engage with base dining facility personnel and officials at Fort Lee (Virginia) who have oversight over menu planning. Work at the national level to create entry points into dining services processes that we can model at Fort Bragg. Continue support and training of farmer network near-base. Continue meeting with Military, Welfare and Recreation personnel on base
and provide support for growing the on-base Farmers Market. Continue on a product-by-product basis (for example Cornucopia cheeses) to increase moving local foods through distributors into the base.

Year 3 Progress/Year 4 Planned Activity: Focused military-related work on the prime vendor for other military installations in NC—Sysco has been working with the Food and Fuel 4 the Forces program at Camp Lejeune to bring NC-produced items into the Sodexo-operated food service operations at Camp Lejeune, and has expressed interest in local seafood. We are using our seafood producer contacts to support this effort. Continue support to produce prime vendor Foster-Caviness to bring local producers into their supply chain.

Conclusion

The goal of the NCGT project can be succinctly described: Facilitate the entry of locally grown foods (produce, meat, dairy, seafood) into mainstream retail and food service supply chains, thus enhancing food security by increasing access to local foods and by strengthening the economics of small to mid-sized farm and fishing operations. Movement toward achieving these goals is through a triple-pronged approach: identification of the most promising solutions by which local production and associated value-added activities can enter local retail and food service markets, piloting of these solutions in North Carolina, and evaluation and reporting of the results for the benefit of other states and regions. This approach is also iterative, in that proposed solutions are tested, evaluated, and used to inform continued work throughout the 5-year project. Year 1 activities focused on building the multi-partner (e.g., private business, food hubs, university, Extension) working groups charged with moving the project toward achieving these objectives and conducting a number of initiatives combining research, extension, and education activities to realize these objectives. Year 2 and Year 3 activities focused on building on existing and catalyzing new value chain relationships to increase flows of produce and conduct pilots for meat, dairy, and eggs for the grocery model, training and networking to build supply on the producer side and demand on the buyer side, and evaluating existing value chain relationships and sharing this with partners and others. Year 4 planned activities will continue successful work that is occurring on the grocery model and working with a larger set of wholesalers to build relationships between small/mid-scale growers and these entities, and continued support to producers to improve quality and lower cost, regardless of market channel.

As noted in greater detail, above, our plan of work for Year 4 includes:
Conduct second niche meat production survey, publish panel comparison with Phase I participant results; conduct seafood and aquaculture survey/interviews to understand production/marketing constraints and identify project resources that can address these constraints; Conduct 5-10 MBA student team research projects with partner entities, offer project results online; Support student research projects with partners at NCSU and NCA&T and utilizing partner company data; Create and offer via the NCGT website practical tools for farmers and practitioners (e.g., tools to translate pallet and case sizes of produce into 100’ rows; enterprise budgets to understand returns to on-farm investments to reach ‘mainstream’ markets); process document on designing/executing a local food supply chain apprenticeship program with private enterprise partners; continue to hold GAP training workshops and support one-on-one food safety risk assessments; continue to hold post-harvest handling workshops and update NCSU extension post-harvest handling fact sheets to be applicable for small/mid-scale producers; continue to offer panel discussions and presentations for growers on how to engage with wholesalers (for all product types—meat, dairy, produce, seafood). Support extension and other agricultural educators in holding grower-buyer connection events in their communities. Continued facilitation between growers and buyers to establish sales connections. Hold second summer NCGT Local Food
Supply Chain Apprentice program with 10-12 apprentices placed in partner organizations; offer Local Food Supply Chain course to MBA students in Spring 2016.
5-Year Logic Model: Two Large-Scale Models (Military and Grocery) of Local Food Distribution in North Carolina (NC)
//From the originally submitted 5-year grant//

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| 1. Establish baseline assessments of local food purchases and supply chain infrastructure for two models (1) Military Model: Fort Bragg retail and dining (2) Grocery Model: Lowes Foods wholesale distribution and retail food chain | 1A. In partnership with Fort Bragg's contracted distributors (Sysco, US Foods, and Foster-Caviness), establish local foods purchases for all retail and dining locales on Base over the prior two years.  
1B. In partnership with Lowe's Foods and its wholesale distributor (MDI), establish local foods purchased/sold in Lowes Food stores over the prior two years.  
1C. Through the NC Department of Agriculture and Consumer Services conduct a state-wide assessment of infrastructure available for use in a localized production-distribution model.  
1D. Through Cooperative Extension and other grant partners assess product supply potential for each targeted category (produce, seafood, meat, dairy) and GAPs certification needs. | • Statewide Assessment Report on the status of the local food supply chain infrastructure and identification of weak links in the supply chain.  
• Baseline assessments of local food purchases for the Military and Grocery Models, to be used as benchmarks for evaluation during the remainder of the 5-year project.  
• Identification and listing of farmers at different stages of GAPs certification: ready to sell; currently in process; and needing training and funding.  
• Farmer and local food businesses populate the NC portal of Market Maker, a US-wide agriculture and fisheries online marketing resource. | • Project-related baseline assessments effectively collected through collaboration.  
• Increase in research-based established points from which to build project activities and assess progress.  
• Creation of equal-status network ties and collaborative efforts among project participants. |
| 2. Address identified supply chain constraints and research and summarize effectiveness of interventions with regard to direct and indirect social and economic | 2A. Provide training & webinar resources to Extension agents and other agricultural educators to promote GAPs certification preparation and other topics in response to needs assessment. Subsidize GAPs certification for 40 farmers per year. Promote farmer-to-farmer | • 400+ Extension Agents and agricultural educators trained  
• 40+ Farmers use project resources for training on GAPs and institutional market standards  
• 500+ producers participate in project-related extension training efforts | • Increase in NC producers who are GAPs certified  
• Increase in NC producers and agricultural educators knowledge of GAPs and institutional |
<table>
<thead>
<tr>
<th>Objectives</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| Reduce product loss and waste.                                            | 2B. Develop/refine localized supply chains for produce, seafood, meat, and dairy for Military and Grocery Models. Evaluate economic feasibility of existing product supply chains as a whole and for each supply chain participant (using project partners as case studies) through review of business records. Evaluate the distribution of decision-making power and existence of fair-returns along the supply chain through observation and interviews with supply chain participants. 2C. Work with local food processing partners to utilize farm seconds. Evaluate waste-stream vermicomposting effort with partner Foster-Caviness. | • 160+ producers apply for GAPs Certification  
• Case study comparisons of the economics of localized supply chains for each product category (produce, seafood, meat, dairy)  
• Qualitative research report detailing the perceptions of all supply chain participants regarding the distribution of power and returns along the chain.  
• Evaluative report on existing and potential capacity and economic returns to local processing of farm seconds.  
• Evaluative report and getting-started manual on feasibility of vermicomposting units for use by produce distributors. | market standards as required by Fort Bragg and Lowes  
• Increase in NC producers who supply foods to Fort Bragg and Lowes Foods  
• Establish local food supply chain course at NC State Poole School of Mgmt.  
• Progressively enhanced knowledge base to inform project efforts  
• Re-Use of food “waste” for value-added products |
| costs and returns.                                                        |                                                                                                                                                                                                          |                                                                                                                                                                                                       |                                                                                                                                                                                                       |
| 3. Address structural and sociocultural conditions which limit local foods in institutional markets | 3A. Work with the NC Fresh Produce Safety Task Force and other partners to develop & pilot test new model for “Whole Farm” GAPs certification  
3B. Work with Military and Grocery partners to create more localized and/or flexible product specifications and grading standards.  
3C. Establish research base for “best value” assessments of Military Model food procurement | • “Whole Farm” GAPs certification standards; Pilot test results  
• Local Food Training Modules on institutional product specifications  
• Proposed alternative local adaptations to Military & Grocery standards for NC crops  
• “Best Value” research report  
• Qualitative research report identifying organizational and sociocultural constraints | • Retailers accept “Whole Farm” GAP certification  
• More NC local food eligible for military and grocery purchase  
• “Best value” assessments enhance NC local food advantage  
• Increased sales of local food |
<table>
<thead>
<tr>
<th>Objectives</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| 4C. Qualitative field research used to identify constraints on the use of new/untested practices related to local food sourcing and sales. | and opportunities to introducing and institutionalizing local food sourcing and sales practices. | • Identification of effective demand-side interventions for each of the two models (military, grocery)  
• Lowes Foods increases the proportion of fresh food (produce, meat, seafood, dairy) sourced locally by one-third  
• Fort Bragg retail food and dining operations source 20% of total fresh food (produce, meat, seafood, dairy) from local sources | • Increased local food sales and access of low-income groups to local food  
• Increased local food demand |
| 4. Apply demand-side interventions and test their effectiveness             | 4A. Expand Lowes Foods’ CSA efforts and explore other retail efforts to promote local food purchases, including specialty packs designed for WIC and SNAP  
4B. Work with military food service personnel to expand local food use in dining services, catering, officers’ clubs, and commissaries. |                                                                                  |                                                                                                      |