CONNECT Our Future:

Food Systems Assessment Report

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EXECUTIVE SUMMARY

INTRODUCTION

This report was produced by ASAP (Appalachian Sustainable Agriculture Project) with CEFS (Center for Environmental Farming Systems) and CFSA (Carolina Farm Stewardship Association) to inform the food systems development work of the CONNECT Our Future project in Charlotte, North Carolina, and 14 surrounding counties: Anson, Cabarrus, Cleveland, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly, and Union counties in North Carolina, and Chester, Lancaster, Union, and York counties in South Carolina. (These counties will be referred to throughout this report as the "CONNECT Our Future project region" or "project region.") This report documents current food and farm conditions, raises awareness of local food system opportunities emerging in the project region, and contributes to the CONNECT Our Future goal to develop a blueprint for regionally directed economic growth.

The Food Systems Assessment Report summarizes major findings from the assessment research and discusses key opportunities and actions for the region based on these findings. The research conducted for this report included a thorough inventory of existing food production and consumption data by county, as well as investigations into regional food system assets including infrastructure, markets, accessibility, and the food waste stream. The Food Systems Assessment Report also identifies the significant data indicators for local food systems throughout the CONNECT Our Future project region and can be used as a resource for the region's communities to conduct their own assessments based on community-specific needs.

The first three sections of this report focus on statistical data and analysis regarding food and farm conditions, food production trends, and consumption patterns for the CONNECT Our Future project region. The last section of the report provides recommendations for strategic action and next steps for developing the local food and farm system of the region. Finally, there are various Appendices to the report including an inventory and analysis of relevant food system assessments in the CONNECT Our Future project region, county snapshots that provide pertinent local food system indicator data for each of the 14 counties in the project region, the results from stakeholder surveys, and an assessment of community resources invested in the regional food system as identified through focus groups.

CONNECT OUR FUTURE PROJECT

CONNECT Our Future is a three-year process in which communities, counties, businesses, educators, non-profits, and other organizations in the Charlotte region are working together to grow jobs and the economy, improve quality of life, and control the cost of government. The food systems component of the CONNECT Our Future project focuses on supporting rural communities and areas that depend on an agricultural economy, while improving the quality of life for all residents. In the long term, the CONNECT Our Future Food Systems Project seeks to develop a regional food system that supports locally-produced foods and enhanced food access as a vital, growing, and sustainable component of the regional economy, and to ensure sufficient rural and agricultural lands to support the local food production economy.

In June 2013, ASAP was awarded the contract to develop a regional food systems strategy for the CONNECT project region. ASAP, in conjunction with CEFS and CFSA, designed a scope of work for three key components: a regional food systems assessment, a regional food systems action plan, and regional and sub-regional food policy council development. ASAP, CEFS, and CFSA participated in CONNECT Our Future Food Systems Work Group and Consortium meetings and engaged the CONNECT Food Systems Work Group to participate in key decisions throughout the process.

KEY FINDINGS

The 14-county CONNECT Our Future project region includes a mix of rural and urban communities with a diversity of economic opportunities for the region's 2.5 million residents; though nearly 40 percent of the region's residents live in urban Mecklenburg county, almost a third of the project region's nearly 7,000 square miles is devoted to agricultural production.

According to the most recent U.S. Department of Agriculture (USDA) Census of Agriculture conducted in 2007, the project region is home to 10,097 farms that reported agricultural receipts totaling over $1.2 billion dollars. However, according to the census data, only 5.2 percent of farms in the region grow fresh fruits and vegetables. The majority of the region's farms produce crops like hay, grain, or animals like cattle that are born in the area but are exported out of state to be matured, slaughtered, and transformed into marketable goods.

When it comes to food production and the food system, the CONNECT Our Future project region's farm economy is in a period of transition. To some extent, change is being driven by a global trend toward continued consolidation of the food system resulting in loss of farms and farmland. At the same time there has been growth in demand for foods grown locally. In the decade between 1997 and 2007, the region experienced a 67 percent increase in farms producing fruits and vegetables. Direct Sales – the USDA category used to describe transactions directly between farmers and consumers – have almost doubled and are expected to continue growing, bolstered by the strong demand for locally grown food. For the project region, this research finds a $662 million gap between the amount residents spend just on fresh fruits and vegetables and the retail equivalent sales of these same fresh fruits and vegetables produced by local farms. In this context of transition, the potential for expanding local markets for local farm products is significant.

Within the CONNECT project region, there are at least 67 farmers markets (the equivalent of one farmers market for every 37,451 residents) providing locally grown food to community members. The 14 counties in the project region experienced a 103 percent increase in direct sales from 2002 to 2007, going from $1.8 million dollars to nearly $3.7 million dollars. Several regional branding programs also exist in the area to add value to local farm products, such as the North Carolina Department of Agriculture's "Got to Be NC" program, the Hillsborough-based "Piedmont Grown" program, the SEED Foundation's "Buy Fresh Buy Local" program, and South Carolina's "Certified South Carolina" campaign. In addition, the CONNECT Our Future region is already home to several annual food and farm events (e.g., the Charlotte area's Know Your Farms Tour, the Statesville Pumpkin Fest, the York County Ag+Art Tour) and to active Farm to Institution programs.

There is growing demand for local food sourced from local farms across all markets, from direct to consumer to the largest regional grocery chains. This report looked at existing food system infrastructure within the region to identify the businesses that currently serve as intermediary steps in local food supply chains, including value-added processors, fresh produce wholesaler/distributors, multi-farm CSAs, food hubs, and more. The assessment mapped existing infrastructure through a Geographic Information Systems (GIS) platform and provides county and regional-level food system stakeholders with an online tool to evaluate food system assets and needs within their communities (www.cefs.ncsu.edu/connect-map.html).

Despite the increasing demand and interest in local food systems development, the research documents issues related to food inequity and lack of food access for specific segments of the region's population. In the CONNECT Our Future project region an estimated 16 percent of the population lives in poverty, 16.8 percent are food-insecure, and 16.7 percent participate in the

Supplemental Nutrition Assistance Program (SNAP). The research did identify a variety of food assistance programs that work to help residents struggling with food insecurity acquire the food they need. Even so, addressing the root of inequity in the food system requires a larger strategy focused on building local wealth and raising people out of poverty.

With targeted promotion and outreach, strategic planning around food system equity and access, and improvements in local infrastructure to accommodate more local products, there is ample room to grow markets, welcome new farmers, and increase all residents' access to local fresh foods in the project region. By creating a strong community-based food system we foster vibrant farms, healthy people, strong communities, healthy ecosystems, and thriving local economies, all of which lead to overall prosperity for every community in the region.

SUMMARY OF RECOMMENDATIONS

BRING FOOD SYSTEM ISSUES TO THE FOREFRONT OF REGIONAL PLANNING

- Engage in innovative agricultural policymaking to create supportive environments for farming and local food sales.
- Review regulations already in place that may be hindering the production or sale of locally produced farm products.
- Examine laws that may prohibit residents from engaging in agricultural pursuits (e.g., community gardens, keeping chickens or bees) within city limits.

SUPPORT FARMERS AND LOCAL FOOD PRODUCTION

- Support farmers' efforts to satisfy local demand by providing training and assistance to help them market their products directly to consumers and to retail and institutional buyers.
- Collaborate with organizations that have the resources and knowledge needed to help new and beginning farmers; find ways to help them expand their capacity to reach more individuals.

CONNECT RESIDENTS TO THEIR FOOD SYSTEM

- Support direct marketing channels by promoting existing outlets, assisting with their expansion, or by providing workshops and training for farmers on relevant topics – salesmanship and display, food safety best-practices, food regulation, marketing, and promotion.
- Increase consumer knowledge and awareness of where food comes from, how it is produced, the impacts of the food system on communities and the environment, and the relationship between food and personal health through farm tours, farmers markets, farm festivals, public gardens, and public awareness campaigns.
- Partner with local media (television, radio, newspapers) and marketing agencies to promote what is being grown in the area and where it is being sold.

ADDRESS EQUITY AND ACCESS IN THE FOOD SYSTEM

- Address the lack of equity in the food system by shifting to solutions based on lifting people out of poverty, while continuing to address the immediate needs of people in hunger.
- Investigate methods for increasing the accessibility of local fresh foods by making these foods more available in the places where low-income community members already shop.
- Conduct community outreach about the availability of local food options.
- Increase awareness of where low-income community members can use their SNAP benefits to purchase local foods.
- Organize opportunities to help less mobile residents access the transportation they need to shop for food.
- Build capacity of markets that sell locally grown foods to accept SNAP benefits.

FOSTER COMMUNICATION AND COLLABORATION AMONG DIVERSE STAKEHOLDERS

- Collaborate with leaders of the smaller communities within the CONNECT region from the very beginning.
- Engage stakeholders (e.g., farmers, food entrepreneurs, food industry buyers, decision makers, agriculture specialists, health and human services representatives) in formative

planning processes. This step will promote project buy-in and simultaneously identify sources of local knowledge, capacity, and resources.

- Empower stakeholders with the means to increase their own abilities to work effectively.
- Access residents' desire to support local farms and the local economy.

CONDUCT ADDITIONAL RESEARCH

- Conduct additional research in the region to identify how residents define local, the messages and values that resonate most with them, and to determine the communications channels they use most often.
- Partner with local media to deliver clear and consistent messaging that mirrors the values and benefits residents associate with buying local food and supporting local farms (as revealed in the research findings).
- Conduct ongoing research to deepen the understanding of how food is moving around the region, what the capacity and opportunity is for infrastructure for local food distribution, processing, etc., and where gaps exist that may be barriers to further local food system development.
- Conduct further research to determine ways to improve the efficiency of food waste disposal in the region.
- Conduct additional research on strategies to increase food access and decrease inequity in the food system.

SECTION 1: DESCRIPTION OF PROJECT REGION

THE PROJECT REGION

The CONNECT Our Future project region is comprised of 14 counties across North and South Carolina including Anson, Cabarrus, Cleveland, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly, and Union counties in North Carolina; Chester, Lancaster, Union, and York counties in South Carolina; and the Catawba Indian Nation (see Figure 1). The project region centers around Mecklenburg County, specifically the Charlotte metropolitan area, the largest metropolitan statistical area in the Carolinas.

FIGURE 1. CONNECT OUR FUTURE PROJECT REGION

The 14-county region includes a mix of rural and urban communities that provide diverse economic opportunities for the region's 2.5 million residents. Mecklenburg County is the most populous county in the region, accounting for nearly 40 percent of the overall population with just under one million residents. However, in terms of geographic size, York County is the largest county in the region at 681 square miles, or 10 percent of the CONNECT Our Future project region's land area. Almost a third of the project region's nearly 7,000 square miles is devoted to agricultural production (29 percent), with Union County in North Carolina containing the largest proportion of farmland acreage in the region (14 percent). Altogether, the project region accounts for 9 percent of the total land area and 9.5 percent of all farmland in the Carolinas.

GEOGRAPHIC LOCATION

Nestled in the heartland of the Carolinas, the CONNECT Our Future project region is characterized by its diverse topography of rolling hills interspersed with mountain ridges, lakes, and old growth forests. The diverse terrain and temperate climate allow area agricultural producers to grow a wide range of products.

Agriculture and food businesses in the project region benefit from the Greater Charlotte area's position as a transportation and business hub. According to the Charlotte Chamber of Commerce, Charlotte is the center of the largest consolidated rail system in the United States, and it is a leading wholesale center with the nation's top per capita sales. Together, these types of infrastructure have contributed to Charlotte's success as a major financial, distribution, and transportation center.[1] Though the project region is landlocked, market opportunities abound through the facilitation of the rail system, major north-south and east-west interstate arteries, and Charlotte's international airport.[2]

MAJOR ECONOMIC DRIVERS

The five largest employers in the CONNECT Our Future project region are Carolinas HealthCare System, Wells Fargo Bank, Bank of America, Charlotte-Mecklenburg Schools, and the City of Charlotte.[3] Across all of the counties in the region, education and health services industries employ the largest number of individuals, followed by manufacturing firms.

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[1] "Business Community Profile: Charlotte Overview," Charlotte Chamber of Commerce, last modified February 2011, http://charlottechamber.com/eco-dev/charlotte-overview/.
[2] Ibid.
[3] "Workforce In-Depth," North Carolina Employment Security Commission, accessed September 25, 2013, http://esesc23.esc.state.nc.us/WorkForceInDepth/.

Healthcare, manufacturing, and energy are the largest industries in the project region but in terms of economic productivity, the banking sector accounts for a disproportionate amount of generated revenue. Charlotte is the second largest financial center in the nation after New York with more than $2.3 trillion in assets.[4] There are 270 Fortune 500 companies represented in Charlotte,[5] and the city is home to over 4,000 million-dollar corporations.[6]

DEMOGRAPHICS

Approximately 80 percent of residents in the project region live in urban areas and 20 percent live in rural areas.[7] An age breakdown of the population reveals that the largest age category is residents 19 years of age or younger, though over half of the population falls within the prime workforce ages of 20 to 60.[8]

In terms of educational attainment, the region's residents have higher high school graduation rates and higher rates of post-secondary education than the North Carolina and South Carolina state averages. High school graduation rates in the project region are 85 percent (compared to 84 percent for the state averages) and post-secondary education rates are 29 percent (compared to the North Carolina and South Carolina averages of 27 percent and 24 percent respectively).[9]

The racial diversity of the project region is comparable to the Carolinas as a whole with 63 percent of the population reporting that they are white, 23 percent reporting black, and 9 percent reporting Latino. The region is also home to the Catawba Indian Nation, a federally recognized native tribe with approximately 2,800 enrolled members.[10] The most recent U.S.

[4] "Business Community Profile: Charlotte Overview."
[5] "Charlotte's Economy & Demographics," Charlotte Chamber of Commerce, accessed September 25, 2013, http://charlottechamber.com/eco-dev/charlotte-s-economy-demographics/.
[6] "Million Dollar Corporations in 2012 Total 4,277," Charlotte Chamber of Commerce, accessed September 25, 2013, http://charlottechamber.com/business-profile/million-dollar-corporations-in-2012-total-4-277/.
[7] "State and County QuickFacts," United States Census Bureau, accessed September 25, 2013, http://quickfacts.census.gov/qfd/states/37000.html.
[8] "American Bentley," United States Census Bureau, accessed September 25, 2013, http://factfinder2.census.gov/.
[9] "State and County QuickFacts," United States Census Bureau.
[10] "Catawba Today," Catawba Indian Nation, accessed October 2, 2013, http://catawbaindian.net/about-us/catawba-today/.

population census lists 1,343 residents living on the reservation, 1,054 of whom recorded their race as “white.”[11]

HEALTH OF THE POPULATION

The most current health data for the counties in the CONNECT Our Future project region indicates high rates of diet-related illness in the population, as seen in Table 1.

TABLE 1. DIET-RELATED ILLNESS IN CONNECT OUR FUTURE PROJECT REGION

	Rate of diagnosed diabetes[12]	**Rate of obesity**[13]	**Rate of high cholesterol**[14],[15]
Anson	12.3%	35.5%	n/a[16]
Cabarrus	9.4%	30.7%	33.9%
Cleveland	11.6%	32.5%	n/a
Gaston	9.0%	26.2%	46.0%
Iredell	8.1%	28.2%	42.7%
Lincoln	10.0%	27.2%	n/a
Mecklenburg	8.5%	25.6%	32.8%
Rowan	10.8%	31.6%	45.8%
Stanly	9.6%	26.6%	n/a
Union (NC)	8.3%	27.9%	35.8%

[11] “2007-2011 American Community Survey,” United States Census Bureau, accessed September 25, 2013, http://factfinder2.census.gov/.
[12] “Centers for Disease Control and Prevention: National Diabetes Surveillance System,” Centers for Disease Control and Prevention, accessed October 8, 2013, http://apps.nccd.cdc.gov/DDT_STRS2/CountyPrevalenceData.aspx?mode=OBS.
[13] Ibid.
[14] “2011 BRFSS Survey Results: North Carolina Counties and AHEC Regions Cholesterol Awareness,” North Carolina State Center for Health Statistics, accessed October 8, 2013, http://www.schs.state.nc.us/SCHS/brfss/2011/nc/nccr/toldhi2.html.
[15] “County-Specific Epidemiology Reports: Coordinated Chronic Disease County Fact Sheet,” South Carolina Department of Health and Environmental Control, accessed October 8, 2013, http://www.scdhec.gov/health/epidata/county.htm.
[16] Data for counties listing “n/a” was unavailable.

Chester	11.3%	31.8%	39.9%
Lancaster	11.0%	32.5%	39.9%
Union (SC)	11.9%	35.8%	43.2%
York	9.0%	29.4%	39.9%
CONNECT Project Region	9.7%	27.7%	n/a

Compared to the nation, the CONNECT Our Future project region has a higher rate of diagnosed diabetes (9.7 percent compared to a national average of 8.5 percent), a considerably lower rate of obesity (27.7 percent compared to the national average of 35.7 percent), and, though a regional average is unavailable, the counties in the region generally exhibit higher rates of diagnosed high cholesterol compared to the national average of 33.5 percent.[17]

Elevated incidences of diet-related illness in the population are evident in the region's morbidity data. Reflecting national trends, diseases of the heart are the leading cause of death in six of the 14 counties and the second leading cause of death in the remaining eight counties. According to the Centers for Disease Control and Prevention, diseases of the heart include hypertensive heart disease, ischemic heart diseases, atherosclerosis, and other diseases where high cholesterol is one of the major risk factors.[18]

[17] National averages come from the Centers for Disease Control and Prevention Diabetes, Obesity, and Cholesterol Facts website, http://www.cdc.gov/.

[18] Donna Hoyert and Jiaquan Xu, "National Vital Statistics Reports," U.S. Department of Health and Human Services Centers for Disease Control and Prevention National Center for Health Statistics National Vital Statistic System 61, no. 6 (2012), http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_06.pdf.

SECTION 2: REGIONAL LOCAL FOOD SUPPLY

PRODUCTION DATA

FARMING IN THE PROJECT REGION

According to the most recent U.S. Department of Agriculture (USDA) Census of Agriculture, which reports data from 2007, the CONNECT Our Future project region is home to 10,097 farms and 14,642 farmers. Table 2 illustrates the distribution of farm size by acreage in the region based on the 2002 and 2007 censuses of agriculture. Small-to-mid-sized farms between 10 and 180 acres were the most common in both census years, accounting for 57 percent of all farms in 2002 and 77 percent of all farms in 2007.

Nationally, the number of farms increased 3.6 percent from 2002 to 2007; the majority of this increase occurred in small farms. Farms in the 1-to-9-acre category increased nearly 30 percent while those in the 10-to-49-acre category rose 10 percent. The CONNECT Our Future project region mirrors this trend of growth in farms of less than 50 acres, which contributed to the region's overall growth in farm numbers (up 0.2 percent) between 2002 and 2007.

TABLE 2. FARMS AND ACRES OF FARMLAND, 2002 AND 2007

	2002	2007	% Change
Farms	10,076	10,097	+0.2%
Land in farms (acres)	1,324,703	1,273,029	-3.9%
Average size of farm (acres)	132	126	-4.5%
Size of farm (acres)			
1 to 9 acres	624	734	+18%
10 to 49 acres	3,807	4,129	+8%
50 to 179 acres	3,887	3,619	-7%
180 to 499 acres	1,296	1,188	-8%

500 to 999 acres	287	250	-13%
1,000 acres or more	175	177	+1%

In contrast to the growth in the number of farms in the region, Table 2 shows a decline in overall farmland acreage from 2002 to 2007. Farm losses occurred with larger-scale farms, between 50 and 999 acres. Those of 500 to 999 acres showed the greatest loss (-13 percent). This increase in small farms, but decrease in large farms explains how the overall number of farms increased in the region between 2002 and 2007 while overall farmland acreage and average farm size both decreased (-3.9 percent and -4.5 percent respectively).

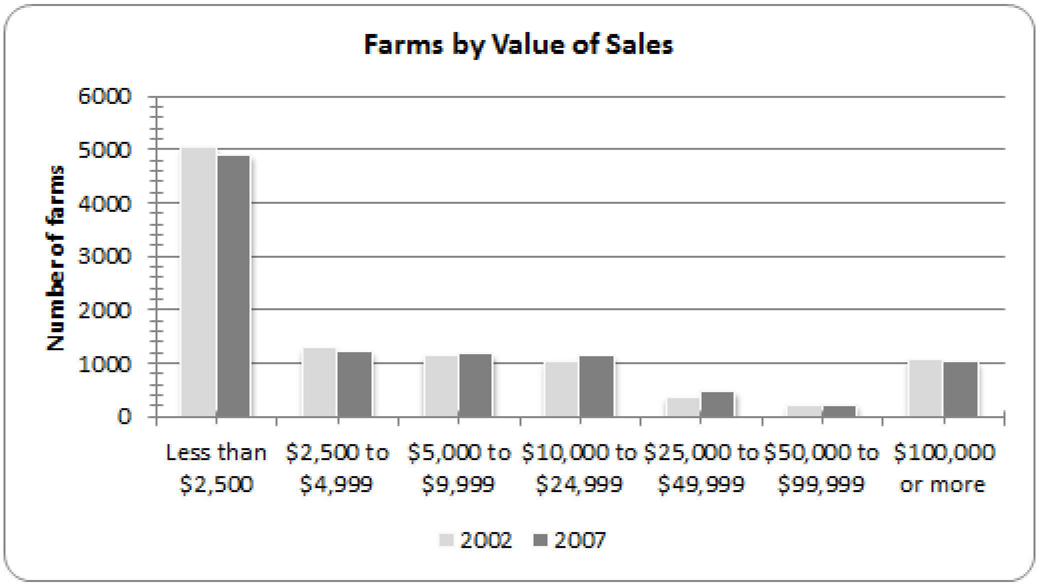
CASH RECEIPTS FROM FARMING

According to the 2007 Census of Agriculture, total agricultural receipts reported for the region totaled over $1.2 billion, a 29 percent increase from the nearly $928 million reported in 2002. However, across both years far more farms in the region reported low sales figures than reported high sales figures. Table 3 and Figure 2 show that in both 2002 and 2007, the vast majority of farms in the region had sales of less than $10,000 (84 percent of farms in 2002 and 83 percent of farms in 2007).

TABLE 3. FARMS BY VALUE OF SALES, 2002 AND 2007

Value of Gross Sales	Number of Farms 2002	Number of Farms 2007
Less than $2,500	5,031 (50 percent)	4,892 (48 percent)
$2,500 to $4,999	1,272 (13 percent)	1,221 (12 percent)
$5,000 to $9,999	1,123 (11 percent)	1,165 (12 percent)
$10,000 to $24,999	1,035 (10 percent)	1,123 (11 percent)
$25,000 to $49,999	352 (3 percent)	469 (5 percent)
$50,000 to $99,999	212 (2 percent)	210 (2 percent)
$100,000 or more	1,051 (10 percent)	1,017 (10 percent)

FIGURE 2. FARMS BY VALUE OF SALES, 2002 AND 2007



This pattern of a small number of farms making up a majority of regional agricultural sales is not uncommon. According to USDA, large farms account for only 12 percent of all U.S. farms, yet these farms produce 84 percent of the value of farm production.[19]

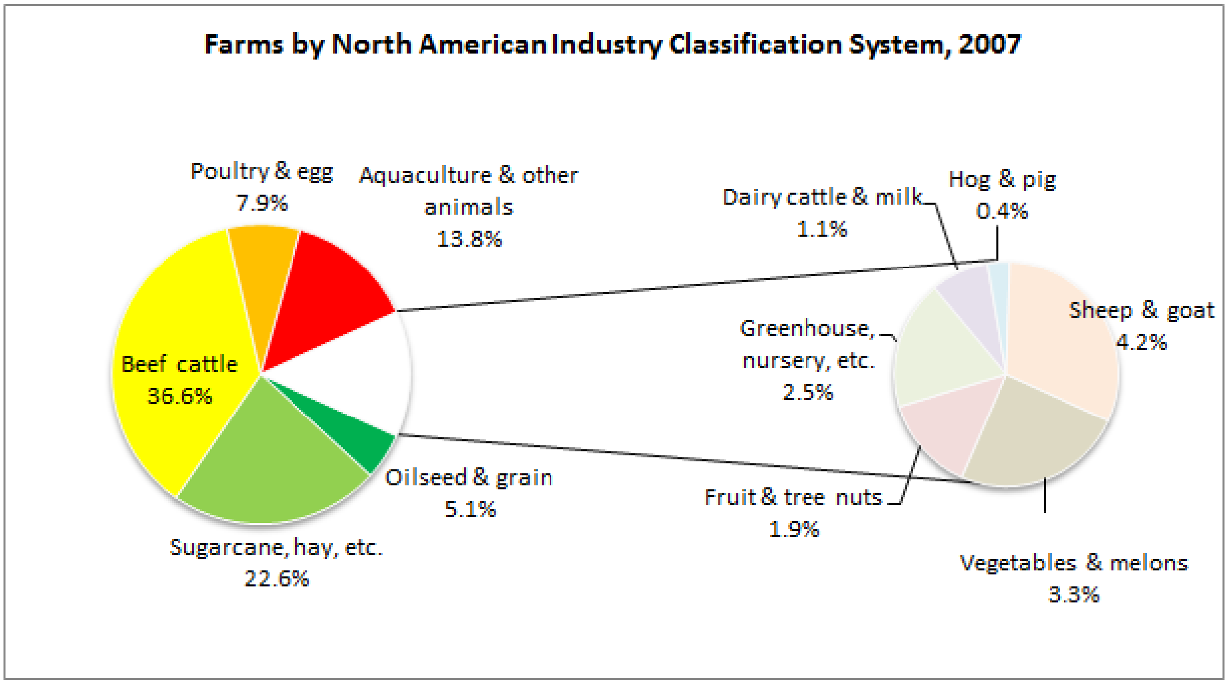
FARM CLASSIFICATIONS

The previous sections note that, according to the most recent census data, the CONNECT Our Future project region is home to 10,097 farms. However, the majority of these farms do not produce food products for human consumption. Instead, they produce other crops including hay, grain, or animals like cattle that are born in the area, but are exported out of state to be matured, slaughtered, and transformed into marketable goods. Figure 3 shows the breakdown of the region's farms by the North American Industry Classification System.[20]

[19] Robert Hoppe and David Banker, "Structure and Finances of U.S. Farms: Family Farm Report, 2010 Edition," USDA ERS Economic Information Bulletin No. (EIB-66) (July 2010): 72, http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib66.aspx#.UnE9MPlPlOE.

[20] The North American Industry Classification System (NAICS) is a set of designations used by businesses and the governments of Canada, Mexico, and the United States to classify establishments according to the type of economic activity they conduct.

FIGURE 3. FARMS BY NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM, 2007



According to Figure 3, only 5.2 percent of farms in the region are growing fresh fruits and vegetables. As the Census of Agriculture does not distinguish between farms that sell their products to local markets and those that do not, the number of these farms producing for local markets is unclear. It is likely that the bulk of fruits and vegetables grown in the region are not marketed for local consumption, but are sold to wholesaler-distributors. However shifts are occurring in the region with the emergence of local markets for locally grown food.

According to GrowCharlotte, a website featuring local farms producing for local markets, the greater Charlotte area is home to 32 farms, 32 CSA[21] programs, and 40 farmers markets engaged in direct sales of local food to local consumers. Though information on the number of farms in the entire project region selling to local markets is not available, research indicates that there are at least 67 farmers markets in the 14 counties (one farmers market for every 37,451 residents) providing local food to local community members.[22] It is the small family

[21] CSA, or Community Supported Agriculture, refers to a system where customers pre-purchase a proportion or "share" of a farm's harvest, and receive regularly scheduled portions of the farm's harvested products.
[22] Farmers markets were identified through personal contacts, the USDA Agricultural Marketing Service's Farmers Market Search directory, and general internet searches.

farms vending at these markets that form the backbone of production for the region's current local food system.

CONSIDERATIONS FOR FARM VITALITY

THE FARMER POPULATION

To a large degree, the sustainability of a regional food system in the project area will hinge upon the availability of farmers to continue to meet market demand for local food. An important consideration, then, is the age of the current farmer population which, according to USDA, is much older than the average age of the U.S. workforce. According to USDA, the average age of farmers has increased every year since 1978. The average age of all U.S. farm operators has been greater than 50 years of age since at least the 1974 census, and between 2002 and 2007, the national average increased from 55.3 to 57.1 years of age. The average farmer age in the project region in 2007 was 58. For the same year, only three percent of farmers reported that they were under the age of 35.

In 2002, USDA began gathering additional information about farm operator characteristics to help clarify issues related to the aging of the farm population, such as farm succession plans and the extent to which young farmers are replacing older farmers as they retire from farming. The new data indicates that only about 9 percent of all farms nationwide have multiple operators from different generations working on their farms as farm operators, and the likelihood of having multiple operators is significantly lower for lower income class farms that predominate in the region. As farmers in the region approach ages generally regarded as retirement age, the question of who will continue to farm the land is a pressing issue that will face local agriculture.

ECONOMIC CONSIDERATIONS

USDA reports that the net cash farm income for farmers in the CONNECT Project Region in 2007 was $254,647,000, with farms in the region netting on average $25,220, an average not too dissimilar from the average income of North Carolina and South Carolina residents ($25,256 and $23,854 respectively).[23] However, this single averaged figure is a poor indicator of the complex pattern in farm profitability for the project area. Figure 4, for example, shows the

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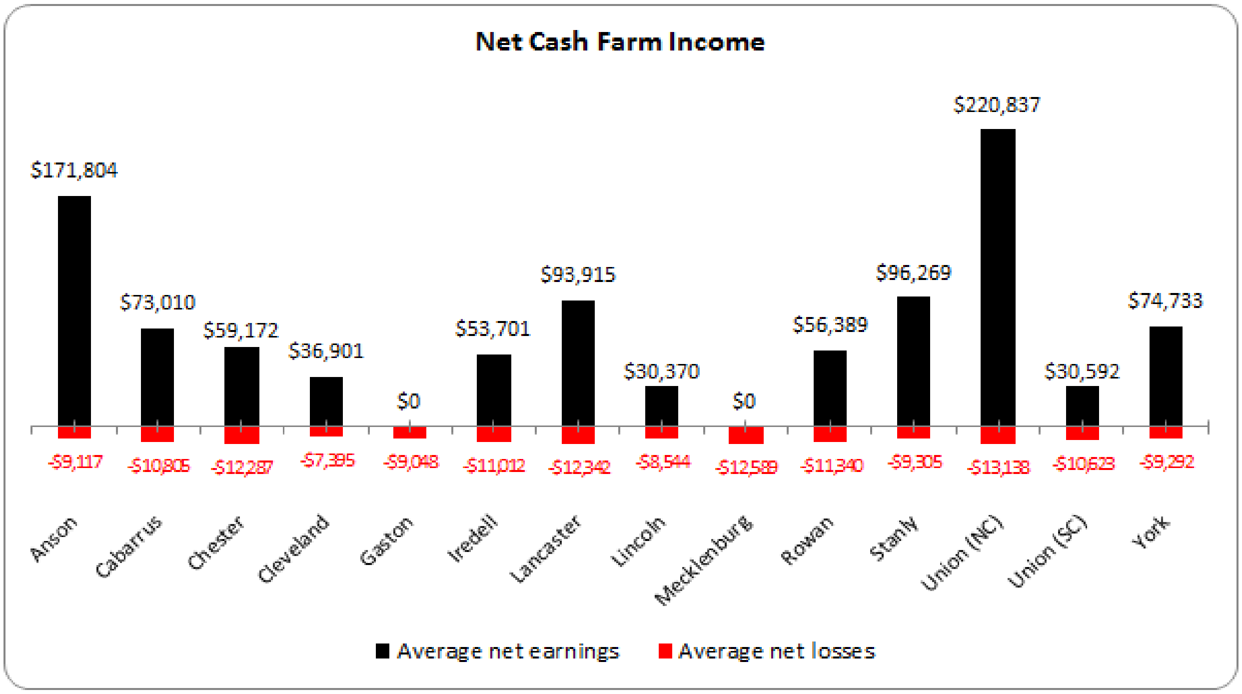
[23] "American Factfinder," United States Census Bureau.

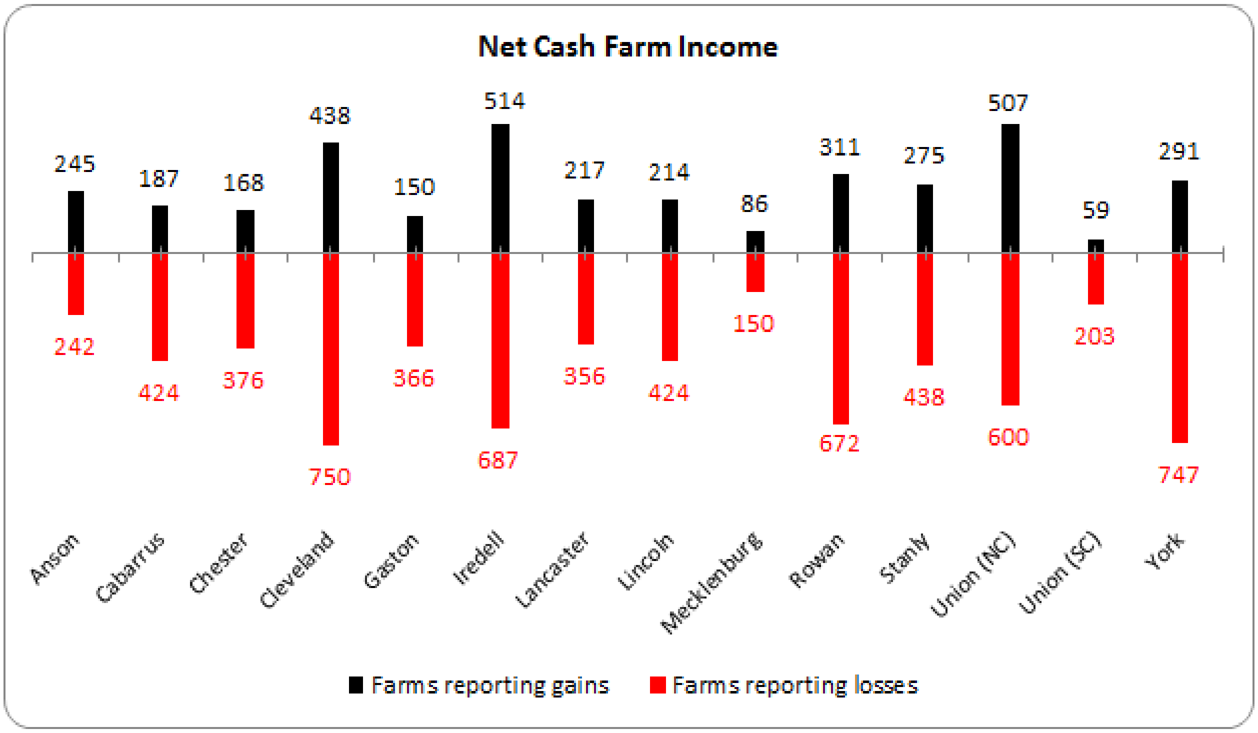
proportion of money earned by farms reporting net profits in the 2007 census (average of $86,253) compared to those reporting net losses (average loss of -$10,320).

FIGURE 4. NET CASH FARM INCOME: AVERAGE NET EARNINGS AND LOSSES, 2007



The extreme difference between the regional average net cash farm income of $25,220 and the net average of $86,253 for profitable farms means that there must be a small number of farms in the region netting large cash incomes, but a large number of farms netting small or negative cash incomes. The census data for 2007 shows this exact pattern. Figure 5 focuses on the number of farms reporting net gains or net losses for the project region. In 2007, the total number of farms reporting net gains was 3,662 while the number reporting net losses was nearly twice as high at 6,435.

FIGURE 5. NET CASH FARM INCOME: FARMS REPORTING NET GAINS AND NET LOSSES, 2007



Therefore, while the profitable farms (Figure 5) in the area reported high average gains and gave the region an overall positive production balance, a much larger number of individual farms reported a net loss of money. According to a 2013 report on U.S. farm income by the Congressional Research Service, small farms, like those that predominate in the CONNECT Our Future project region, often receive little or no income from farm-related product sales. These farm families often have a total household income level that qualifies them as limited-resource farms (i.e., household income does not exceed the national poverty level for a family of four, or is less than half the county median household income in each of the 2 years prior).[24]

Nevertheless, while it is not uncommon for farms to report net cash income losses, this category of data alone does not fully account for farm profitability. Farm operations are afforded many federal tax breaks and write-offs, and small farms often maximize benefits, using business expenses to offset income. In addition, the Census of Agriculture uses tax-based definitions to measure farm profitability and success, measures that are not always accurate, nor necessarily the best measures of farm success. For example, there are a large number of

[24] Randy Schnepf, "US Farm Income," Congressional Research Service (2013), http://www.fas.org/sgp/crs/misc/R40152.pdf.

farmers in the Census of Agriculture who do not farm as their primary occupation and who earn an undisclosed amount of money from off-farm jobs which are not reported in the census.[25] Some farms stay in farming for reasons other than supporting the family income, such as continuing a family tradition, maintaining a rural lifestyle, or so that they can access tax breaks given to farms through programs like Current Use Valuation, which taxes farm property at a lower rate than non-farms.

Regardless, long term sustainability of the farm sector depends on the ability of regional farms to make money. The ability of individual farms to earn a profit depends on their capacity to increase total revenues and/or lower total costs, and local markets in local food systems are an important means of achieving these goals.

OPPORTUNITIES IN THE LOCAL MARKET FOR LOCALLY GROWN FOOD

Despite national trends toward consolidation of the food system, other national trends demonstrate the growth in local, decentralized markets. According to an August 2013 USDA news release, local food sales through direct and intermediate markets, worth an estimated $1 billion in 2005, grew to $4.8 billion in 2007 and reached nearly $7 billion in 2012.[26] National market research by firms like the Hartman Group and JWT Advertising have tracked the shift in consumer demand to favor locally grown foods, with organizations like the National Restaurant Association and National Grocers Association naming locally sourced foods as top trends in 2012 and 2013.[27]

Evidence of the interest in local food in the CONNECT Our Future project region is found in various studies and surveys conducted with residents and businesses, which document high and consistent demand for local food products. For example, in their 2012 study of South Carolina consumers, researchers Willis, Carpio, and Young found that the majority of study

[25] In the 2007 Census of Agriculture, 4,114 farmers in the region reported farming as their primary occupation while 6,071 (60 percent) reported "other" as their primary occupation.
[26] "USDA Celebrates National Farmers Market Week, August 4-10," USDA Office of Communications, News Release No. 0155.13, accessed October 31, 2013, http://www.usda.gov/wps/portal/usda/usdamediafb?contentid=2013/08/0155.xml&printable=true&contentidonly=true.
[27] "What's Hot 2013 Chef Survey," National Restaurant Association, accessed October 31, 2013, http://www.restaurant.org/Downloads/PDFs/News-Research/WhatsHotFood2013.pdf.

participants prefer locally grown products to out-of-state products.[28] Another 2012 study conducted by CFSA with North Carolina food businesses found that, among businesses surveyed, business managers prefer locally-sourced products (e.g., tomatoes) over non-local alternatives when the local products are in season.[29] Anecdotal evidence too shows demand for locally grown products. The restaurants Veres and Parsons in Charlotte both began as food trucks but moved to brick-and-mortar establishments to accommodate expanding interest in their local fare.[30] This evidence is a clear manifestation of consumer desire for local food and of the current momentum around local food systems development in the project region.

In addition to local opportunities for the area's producers to sell their products to residents, the City of Charlotte itself – which accounts for over half of the land area of the county – is a potential multi-million dollar market opportunity for CONNECT Our Future region producers to tap into urban demand for local food. Of the 14 counties in the project region, Mecklenburg County contains the fewest number of farms (236 in 2007), but as the 17th largest city in the United States, Charlotte contains the largest population of any city in the region at nearly one million people. Each year, Charlotte's residents spend an estimated $156 million on fresh fruits and vegetables, which is more than three times the retail value of all fruit and vegetable products sold by producers of the CONNECT Our Future project region combined.[31],[32]

Mecklenburg County is also the most visited county in North Carolina. In 2012, visitors to Mecklenburg County spent over $4.4 billion.[33] According to tourism research firm Global Insight, food accounts for the largest percentage of spending by North Carolina visitors, representing approximately 73 percent.[34] Therefore for 2012, visitors to Mecklenburg County

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[28] David B. Willis et al., "Consumer Willingness to Pay for Locally Grown Produce Designed to Support Local Food Banks and Enhance Locally Grown Producer Markets," Journal of Agriculture, Food Systems, and Community Development 15 (2013), http://ageconsearch.umn.edu/bitstream/150288/2/Willis%20et%20al%20AAEA%202013R.pdf.

[29] Taylor Sisk et al., "Organic Produce Marketing Survey," Smithson Mills, Inc. (North Carolina: 2013): 17.

[30] Taylor Sisk et al., "Organic Produce Marketing Survey," 7.

[31] "Table 3123. Southern region by income before taxes: Average annual expenditures and characteristics, Consumer Expenditure Survey, 2011-2012," U.S. Bureau of Labor Statistics (2013), www.bls.gove/cex/2012/CrossTabs/regbyinc/xregns.PDF.

[32] Combined retail value of all fruits and vegetables grown in the CONNECT Our Future project area is calculated as the 2007 Census reported wholesale value of sales multiplied by an average produce retail mark-up of 3. Charlotte resident spending ($156 million) divided by retail value of production ($48.7 million) yields 3.2.

[33] Laura Hill, "Visitor Spending Increases to $4.4 Billion in Mecklenburg County and More Than $5.7 Billion in Charlotte Region," Charlotte Regional Visitors Authority (2013), http://www.crva.com/news/newsroom.aspx.

[34] "How Important is Tourism in North Carolina: The Tourism Satellite Account Perspective," Global Insight (North Carolina: 2006): 15, http://www.nccommerce.com/LinkClick.aspx?fileticket=bmxDyvsTXOk%3D&tabid=1547&mid=4666.

spent an estimated $3.2 billion on food during their visit, providing additional opportunities for the project region to market local food options to visitors and to generate added economic opportunity for local food producers and food businesses.

LOCAL FOOD PRODUCTION

No matter how large the demand for locally grown food grows, however, there is an upper limit to the amount of local product visitors, residents, and businesses can purchase from regional growers based on climate and soil-related limitations. Local farmers cannot supply 100 percent of the produce desired by local customers, because they cannot efficiently grow avocados, lemons, or bananas, for example, no matter how much local food infrastructure is improved. They can, however, grow 22 different types of fruits and vegetables that account for over 53 percent of the fresh fruits and vegetables most commonly consumed by the region's residents.[35] Table 4 lists these 22 items along with their corresponding share of total retail produce sales by American shoppers in 2012.

TABLE 4. DOLLAR SHARE OF RETAIL PRODUCE SALES FOR SELECTED PRODUCE, 2012

	% of Total Produce Sales		**% of Total Produce Sales**
Apples	7.0%	Okra	1.0%
Bell peppers	2.6%	Peaches	1.2%
Blackberries	0.7%	Pears	1.2%
Blueberries	2.4%	Potatoes	6.0%
Cantaloupe	1.5%	Pumpkins	0.2%
Collards	0.3%	Snap beans	0.8%
Cucumbers	1.8%	Squash	1.4%
Grapes	6.1%	Strawberries	4.9%
Lettuce	2.2%	Sweet corn	1.2%
Lima beans	n/a	Tomatoes	7.4%
Nuts (all)	0.4%	Watermelons	2.3%

[35] Lori Fairchild, ed., "The 2012 Produce Availability & Merchandising Guide," (Vance Publishing Corporation: 2012).

Tables 5 and 6 show production and consumption estimates for ten of the 22 fresh fruits and vegetables in addition to meat and dairy items also produced in the CONNECT Our Future project region. The column labeled "Acres in Production" shows the current capacity for production of fresh goods as of 2007. The column titled "Sufficient to Supply (x)% of the Local Population" is a calculation to estimate, based on per capita consumption of each fresh food item by area residents, the approximate amount of local demand that could be supplied by local production.

What is clear from Table 5 is that for some of the fresh fruits and vegetables grown in the region, there is significantly more demand (consumption) than supply (production) for many. For certain produce items, however, regional production levels far surpass regional consumption levels.

TABLE 5. PRODUCTION OF SELECTED FRESH FRUITS AND VEGETABLES, 2007

	Acres in Production[36]	**Sufficient to Supply (x)% of the Local Population**[37,38]
Apples	163	15%
Bell peppers	15	2%
Blackberries	64	600%
Blueberries	19	8%
Cantaloupe	183	125%
Collards	14	180%
Cucumbers	85	20%
Grapes	92	8%
Lettuce	3	1%
Lima beans	3	500%

[36] Cynthia Clark, ed., "2007 Census of Agriculture," National Agricultural Statistics Service United Stated Department of Agriculture (2009), http://www.agcensus.usda.gov/Publications/2007/Full_Report/index.asp.
[37] "Crops Highs & Lows Stocks & Storage: Biotech Varieties Floriculture County Estimates," North Carolina Department of Agriculture (2010), http://www.ncagr.gov/stats/2010AgStat/Page057_082.pdf.
[38] Jeanine Bentley and Jean C. Buzby, "ERS Food Availability (Per Capita) Data System (FADS)," (2013), http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system.aspx#.UnkVy_lPlOE.

Nuts (all)	123	5%
Okra	31	135%
Peaches	339	210%
Pears	13	8%
Potatoes	37	1%
Pumpkins	116	2,400%
Snap beans	26	7%
Squash	469	270%
Strawberries	96	15%
Sweet corn	327	235%
Tomatoes	638	50%
Watermelons	253	55%

Table 6, like Table 5 shows nearly an even split with some animal products being produced in quantities lower than regional demand (i.e., beef and milk) but others grown in quantities much larger than what the local population consumes per year (i.e., turkey and chicken).

TABLE 6. PRODUCTION OF SELECTED ANIMAL PRODUCTS, 2007

	Number of Animals[39]	**Sufficient to Supply (x)% of the Local Population**[40],[41]
Beef cows	121,374	65%
Chickens	135,860,810	385%
Turkeys	14,752,104	1,090%
Fluid cow's milk	19,029	70%

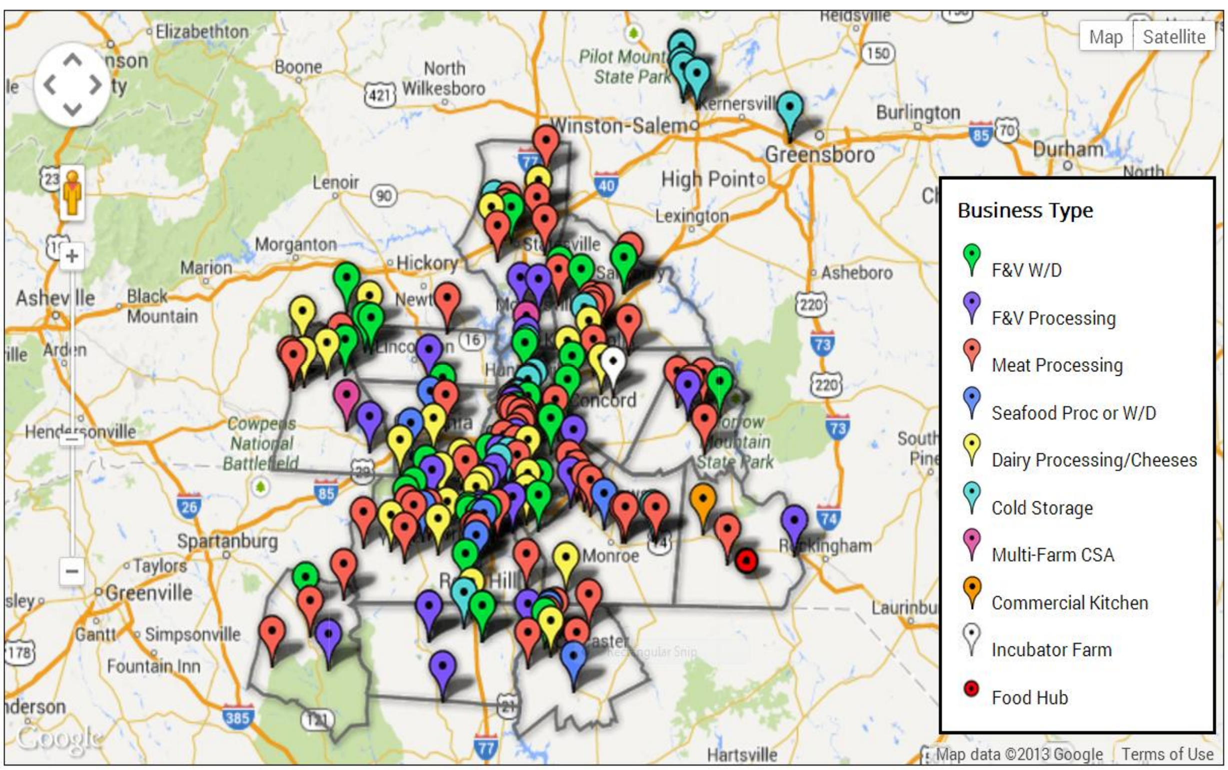
[39] Cynthia Clark, ed., "2007 Census of Agriculture"; "Data Food Availability (Per Capita) Data System: Food Guide Pyramid" Economic Research Service (2011), http://www.ncagr.gov/stats/2010AgStat/Page057_082.pdf.
[40] "Crops Highs & Lows Stocks & Storage: Biotech Varieties Floriculture County Estimates," North Carolina Department of Agriculture (2010), http://www.ncagr.gov/stats/2010AgStat/Page057_082.pdf.
[41] Jeanine Bentley and Jean C. Buzby, "ERS Food Availability (Per Capita) Data System (FADS)."

Though Tables 5 and 6 show large quantities of local food production in the region, as stated previously, a large majority of these products are not marketed to local residents but are sold to distant markets through complex national and global food supply chains. The challenge for local food system developers and the CONNECT Our Future project is to research and understand the intricacies of this system and conduct strategic interventions that boost the capacity of local producers to grow for and supply local consumers through local markets.

LOCAL FOOD INFRASTRUCTURE INVENTORY

The CONNECT Our Future Local Food Infrastructure Inventory is a tool for local governments and community groups to use in combination with additional data – such as that contained in this assessment report – to understand and develop a strategy for developing their local food systems. The CONNECT Our Future Local Food Infrastructure Inventory can be found at www.cefs.ncsu.edu/connect-map.html. Figure 6 shows a map of the entities inventoried throughout the CONNECT Our Future project region at the time of completion of this report, and can also be found online at www.cefs.ncsu.edu/connect-map.html.

FIGURE 6. LOCAL FOOD INFRASTRUCTURE INVENTORY MAP FOR PROJECT REGION, 2013



METHODOLOGY

The inventory includes businesses that serve as intermediary steps in local food supply chains such as value-added processors (e.g., fruit and vegetable processing, meat processing, specialty jams, and pickling operations), fresh produce wholesaler/distributors, multi-farm CSAs, food hubs, cold storage, and community kitchens. The data collection began with a business entity list from Dun & Bradstreet,[42] which was cleaned and amended using online sources (such as information from the North Carolina and South Carolina Departments of Agriculture). Researchers then supplied the list to Extension field staff and economic development personnel in each of the 14 counties and the Catawba Nation so that on-site observations could confirm or refute the presence of identified businesses. Three attempts – two emails and one phone call – were made to each individual to collect their amendments and corrections to the listings. Researchers mapped these amended/corrected listings, sent them for final approval to county-level staff in each of the 14 project counties, and then posted the mapped listings online for public input.

INTENDED USES

The inventory was designed to provide county or regional-level food system stakeholders with a visual tool, a means to "see" the status of intermediary elements in the supply chain. Users can also easily download the data directly from the website. The listings will remain active through the duration of the CONNECT Our Future food systems planning initiative, with new entities accepted via the *Add Location* page. Entities submitted to the database via the *Add Location* page will be vetted by project staff and uploaded to the database and mapped if appropriate. Upon conclusion of the project, the North Carolina information will continue to reside as a mapped database in the statewide NC Local Food Infrastructure Inventory.

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[42] Dun & Bradstreet is a public business that licenses information on companies for the purposes of making credit decisions, business-to-business marketing decisions, or conducting supply chain management. The firm is the originator of the Data Universal Numbering System (DUNS). For this inventory, businesses included in the inventory met the following NAICS codes: 311, 4244, 49312.

TABLE 7. ENTITIES MAPPED ON LOCAL FOOD INFRASTRUCTURE INVENTORY MAP, 2013

Infrastructure Category	**# of Entities**
Fruit & Vegetable Wholesale/Distributors	30
Fruit & Vegetable Processing	22
Meat Processing	
Total	67
Niche Meat Producers (Works Directly with Farmers)*	7
Seafood Processing or Wholesale/Distribution	10
Dairy Processing/Cheeses	26
Cold Storage	13
Multi-farm CSA	2
Commercial Kitchen	1
Incubator Farm	1
Food Hub	1
Farmers Markets (in process of adding icon to map)	59

*Information is available for NC processors. Five of the 48 North Carolina meat processing facilities slaughter and/or process for farmers.

EQUITY AND ACCESS

Equity in the food system refers to the degree to which cultural, geographic, economic, and institutional variables affect individuals' abilities to obtain adequate, nutritious foods.[43] The most significant cause of food inequity in any location is poverty. Individuals and families living in poverty disproportionately have difficulty accessing the food they require to live healthy, active lives. While food assistance and hunger relief programs provide relief to individuals and families experiencing food insecurity and hunger, long term systemic solutions must tackle this key root cause and bring people out of poverty. In the CONNECT Our Future project region, an

[43] Barbara Cohen, "Community Food Security Assessment Toolkit," Economic Research Service (2002), http://www.uc.edu/cdc/urban_database/food_resources/community_food_security_assessment_USDA.pdf.

estimated 16 percent of the population lives in poverty (nearly 401,500 people).[44] This figure is slightly higher than the national estimate of 14 percent, or 45 million people, living in poverty in 2012.[45]

EQUITY AND THE DOMINANT FOOD SYSTEM

While there are multiple factors that contribute to poverty, the dominant industrialized food system is itself a significant source of poverty and therefore food insecurity.[46] There is extreme pressure within the food industry to keep the price of food low and margins tight. Labor, being the single largest category of food production and delivery expense, is therefore tightly controlled. According to the Bureau of Labor Statistics, seven of the 10 lowest paying jobs in the country are in food preparation, food service occupations, farm work, and farm labor; around half of all U.S. workers paid at or below the Federal minimum wage are employed in the leisure and hospitality industry, specifically in restaurants and other food service.[47]

In the CONNECT Our Future project region, an estimated 10 percent of employed adults work in the food industry and on average earn less than the average salary of residents in the region as a whole. The average annual wage for residents as a whole in the project region is $27,500 compared to farmworkers and laborers in the region who earn $22,590 per year, animal slaughter and processing workers who earn $23,140 per year, and food preparation and service workers who earn $20,830 per year.

INEQUITY IN THE CONNECT OUR FUTURE PROJECT REGION

As of 2011, the most recent year of measure, approximately 16.8 percent of residents in the CONNECT Our Future region were food-insecure. For the same year, an estimated 403,772

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[44] Vince Breneman and Jessica Todd, “Food Environment Atlas,” last modified September 18, 2013, http://www.ers.usda.gov/data-products/food-environment-atlas.aspx#.UnkW0flPlOE.

[45] “State and County QuickFacts,” United States Census Bureau (2010), http://quickfacts.census.gov/qfd/states/37000.html.

[46] Food insecurity was originally defined under the U.S. Food Security Measurement Project in response to the National Nutrition Monitoring and Related Research Act of 1990 (NNMRR). Food insecurity is defined as a household-level economic and social condition of limited or uncertain access to adequate food. A related measure is “hunger,” which refers to an individual-level physiological condition that may result from food insecurity. For more information: http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx#.UmaSZ_lPlOE.

[47] “Characteristics of Minimum Wage Workers: 2011,” United States Bureau of Labor Statistics (March 2, 2012), http://www.bls.gov/cps/minwage2011.htm.

(16.7 percent) of residents participated in the Supplemental Nutrition Assistance Program (SNAP) and 67,680 (2.8 percent) participated in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).[48],[49] Both are federal food assistance programs that provide financial assistance for low-income individuals to help them purchase food. According to data from USDA's Food Environment Atlas, SNAP and WIC participants received nearly $652 million in benefits in 2011 to purchase authorized groceries.

FIGURE 7. FOOD DESERTS WITHIN THE PROJECT REGION, 2013

Federal and state data on the rates of residents' food insecurity, hunger, and reliance on food support programs provides evidence of the connection between poverty and food insecurity in the region. Figure 7 shows the distribution of 87 census tracts that have been identified as "food deserts" by USDA's Food Access Research Atlas (15 percent of all census tracts in the

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[48] Vince Breneman and Jessica Todd, "Food Environment Atlas."
[49] The USDA's Economic Research Service provides household food insecurity data, as well as SNAP participation rates, for counties as state aggregated averages. For 2011, North Carolina's average food insecurity rate was 17.1 percent and the SNAP participation rate was 16.5 percent. For the same year, South Carolina's average food insecurity rate was 14.8 percent and SNAP participation rate was 18 percent (last modified September 18, 2013).

CONNECT Our Future region).[50] The food desert designation uses a mixture of income levels and proximity to supermarkets, supercenters, or large grocery stores to define low food access. When a census tract's predominant population is low-income individuals and there is also a dearth of food retail options, that tract is identified as a food desert.

The residents of the project region are aware that food insecurity and poverty are pressing issues in their communities. In a 2011 community survey, Anson County residents noted that poverty was a serious local issue and that low wages were limiting families' abilities to maintain food security.[51]

In their in-depth look at food deserts in Mecklenburg County, researchers Racine, Wang, and Wilson verified the relationship between poverty and access to full-service food stores in the county. Their research found that "having more non-full-service stores compared to full-service stores is more common in lower income areas."[52] In other words, the ratio of non-full-service stores – such as corner stores or convenience stores – to supermarkets is much higher in low-income neighborhoods than higher income neighborhoods. This means that community members in low-income neighborhoods in Mecklenburg county often live in food environments where access to less healthy convenience foods is greater than access to healthy, fresh foods.

The CONNECT Our Future region is home to a variety of food assistance programs that work to help residents struggling with food insecurity acquire the food they need. In the fall of 2013, the CEFS conducted a series of focus group meetings with local food systems stakeholders in the area to better understand the resources available in local communities, including those related to food assistance programs. Both the focus group participants and the food system stakeholders surveyed for this assessment (health and human services professionals, agricultural support personnel, food buyers) identified a number of existing programs, services, and businesses that support food access for low-income individuals in the CONNECT Our Future project region, including food banks, food pantries, crisis ministries, meal delivery services, farmers markets, mobile markets, community gardens, and food assistance benefits programs like SNAP and WIC. Table 8 lists a sampling of these programs.

[50] Michele Ver Ploeg and Vince Breneman, "Food Access Research Atlas," last modified May 8, 2013, http://www.ers.usda.gov/data-products/food-access-research-atlas.aspx.
[51] Bill McCoy and Linda Jacobs Shipley, "Community Needs Assessment: Change for Good Begins Here" (Charlotte, NC: 2011), http://ui.uncc.edu/sites/default/files/pdf/2011_UW_Needs_Assessment_Full_Report.pdf.
[52] Elizabeth Racine, Qingfang Wang, and Christina Wilson, "Mecklenburg County Food Assessment 2010" (Charlotte, NC: 2010): 16.

TABLE 8. SELECTED PANTRIES, FOOD BANKS, AND COMMUNITY GARDENS IN THE REGION BY COUNTY

County	Pantries, Food Banks, and Community Gardens
Anson	Angels & Sparrows Soup Kitchen Anson Crisis Ministry Feed My Lambs
Cabarrus	Operation Bread Basket Low2Max Yield Community Garden at the Lomax Farm
Cleveland	Walls Memorial Baptist Church Food Pantry Solid Rock Garden
Gaston	B.R.E.A.D. Ministries, Inc. Gaston County Historic Community Garden
Iredell	Mooresville Soup Kitchen
Lincoln	Soup Kitchen, Christian Ministry of Lincoln County Lincoln County Community Garden
Mecklenburg	Friendship Trays Loaves and Fishes Friendship Gardens SEEDS Community Garden at St. Alban's Episcopal Church
Rowan	Rowan Helping Ministries St. Luke's Community Garden
Stanly	Stanly Community Christian Ministry Healthy Harvest Teaching Garden
Union, NC	Loaves and Fishes of Union County, Inc.
Chester	Harvest Hope Food Bank
Lancaster	HOPE in Lancaster, Inc. Lancaster County Community Garden
Union, SC	Second Harvest Food Bank of Metrolina
York	PATH People Attempting To Help

These same stakeholders also identified programs, services, and businesses that are currently absent in their area but that should be investigated to support increased food access. The number one response was transportation opportunities, followed by community gardens. Respondents also named mobile markets, a local food promotional campaign, access to farm stands, and food diversion to those in need as potential opportunities.

OTHER FACTORS TO CONSIDER

Food availability is not the only factor that influences resident food purchasing behavior. When it comes to food choices, perceptions around social and cultural acceptability, knowledge of food and nutrition, methods of food preparation, and life experiences all play vital roles. In a 2008 study by Wiig and Smith,[53] for example, researchers found that if food stamp allowances were raised, low-income single mothers spent the extra money on meat, particularly low quality, high fat meats like hot dogs and ground beef, and spent less on fruits and vegetables. Researchers determined this is because, among American families, meat is seen as a high status symbol and is thought of as a superior source of nutrition.[54] In this example, even though fruits and vegetables were available, single mothers preferred to purchase meat based on their perception that meat products are more desirable.

In addition to cultural and social perceptions around food and eating, access to information can also play an important role in food purchasing choices. While the link between education and healthy eating is not fully understood, food systems and nutrition researchers have documented a correlation between lower levels of educational attainment and low consumption levels of fresh fruits and vegetables.[55],[56],[57] These researchers theorize that low-income individuals may be less aware of the foods that make up a healthy diet, or that people with low levels of education likely earn more modest incomes, which reduces their purchasing power in the marketplace.[58] Research from a Community Needs Assessment prepared by the UNC Charlotte Urban Institute for United Way of Central Carolinas[59] identifies community education as "the most important and encompassing need in the UWCC region."[60] The report

[53] K. Wiig and C. Smith, "Grocery Shopping on a Food Stamp Budget and Factors Influencing Food Choice Among Low-Income Women," Journal of the American Dietetic Association 108, no. 9 Supplement (2008): A24.
[54] Antoinette M. Sangye, "Barriers to Consuming Healthy Food and the Role of Food Pantries in Improving Diets on Low Income Families," Wright State University CORE Scholar (2013).
[55] C. Aguiar et al., "Federal Nutrition Assistance at Farmers Markets: Evaluating Self-Efficacy and the Home Nutrition Environment" (2013), http://onlinelibrary.wiley.com/doi/10.1002/cbdv.200490137/abstract.
[56] S. Casagrande et al., "Have Americans Increased Their Fruit and Vegetable Intake? Trends Between 1988 and 2002," American Journal of Preventive Medicine 32, no. 4 (2007): 257-263.
[57] M.A. Horodynski et al., "Low-Income African American and Non-Hispanic White Mothers' Self-Efficacy, 'Picky Eater' Perception, and Toddler Fruit and Vegetable Consumption," Public Nursing 27, no. 5 (2010): 408-417.
[58] Antoinette M. Sangye, "Barriers to Consuming Healthy Food and the Role of Food Pantries in Improving Diets on Low Income Families."
[59] Bill McCoy and Linda Jacobs Shipley, "2011 Community Needs Assessment: Change for Good Begins Here," (Charlotte, NC: University of North Carolina at Charlotte's Urban Institute, 2011), http://ui.uncc.edu/sites/default/files/pdf/2011_UW_Needs_Assessment_Full_Report.pdf.
[60] Bill McCoy and Linda Jacobs Shipley, "2011 Community Needs Assessment: Change for Good Begins Here," 4.

notes that a lack of knowledge leads to a lack of awareness of the issues related to the social well-being of the community, and perpetuates misperceptions and negative stereotypes that can limit a community's receptivity to change. Though this report is not specifically referring to issues around food or farm knowledge, the same basic principles apply where, when people are well informed and understand the consequences of their actions, they are more likely to take deliberate, positive actions, including those involving food choices.

In addition to social and cultural perceptions and access to information, research from the health sciences demonstrates that food habits and preferences are directly impacted by positive and negative experiences. Preferences for food develop in positive contexts, and aversions to foods develop in negative contexts. An application of this principle would be that children and adults who have positive experiences with local farms and food tend to develop an appreciation for local food and farms. Farm field trips, cooking demonstrations with seasonal ingredients, local food tastings, meet-the-farmer events, school gardens, and other hands-on activities engage participants positively with local agriculture. Kids and adults participate in planting and harvesting activities, learn to cook with seasonal ingredients, learn about the cycles of agriculture and the seasonality of crops, meet farmers growing food in their communities, and try new fruits and vegetables. These types of positive experiences influence the formation of food preferences and eating habits, develop local food and farm advocates, and, in the long term, create healthier individuals and communities.

Focus group participants reported numerous regional programs designed to provide local residents with positive experiences with local farms and food, including: farms tours, such as the Ag + Art Tour in York County, S.C.; community dinners, such as Meet Up to Eat Up, which is sponsored by the Foothill Farmers Market in Cleveland County; community gardens, such as those associated with Carolina Home Grown in Union County; and a variety of classes that focus on recipes and skills related to locally grown food.

In addition to community-wide programs and events, the project region supports a number of organizations and opportunities for food and farm education aimed specifically at school children. Organizations like the nonprofit CharMeck Farm to School program in Charlotte and Farm to School Rowan-Salisbury in Rowan County work with schools to provide students with healthy meals in their cafeterias and teach kids about the path food takes from farm to fork while instilling healthy eating habits through hands-on education. Focus group participants also identified the Green Teachers Network, a program designed to help teachers start a schoolyard garden and incorporate garden activities into the curriculum. The program was launched by the Catawba River District, and includes educators from Gaston and Mecklenburg schools, Cooperative Extension offices, the Mecklenburg Health Department and other nonprofit groups as partners.

FOOD WASTE MANAGEMENT

Food waste is an important aspect of a regional food system. USDA's Economic Research Service estimates that 133 billion pounds of food, or 31 percent of the 430 billion pounds of food available for human consumption in the United States, is wasted each year.[61] This represents a loss of more than $160 billion worth of food each year, as well as the energy, land, water, and chemical inputs used to grow this food.[62] In addition, the majority of this uneaten food ends up decomposing in landfills, where organic matter accounts for 16 percent of U.S. methane emissions.[63] Recovering just 15 percent of the food that is wasted each year, for example, would provide enough food to feed more than 25 million Americans (at a time when one in six Americans suffer from food insecurity).[64]

As population growth leads to increased pressures on agricultural land and other resources, a system of food waste recovery and disposal can help to make better use of natural resources, reduce environmental impacts, provide opportunities for financial savings and entrepreneurship throughout the food supply chain, and enhance our ability to meet food demand.

FOOD WASTE IN THE CONNECT OUR FUTURE PROJECT REGION

The North Carolina Department of Environment and Natural Resources (NC DENR) estimates that more than 1.1 million tons of food waste are generated within the state each year.[65] The residential sector is estimated to generate more than 61 percent of this total, or 673,000 tons of food waste annually, with each household generating more than seven pounds of food waste each week.[66] The commercial sector in North Carolina generates nearly 570,000 annual tons of

[61] Jean C. Buzby, Hodan Farah Wells, and Jeanine Bentley, "ERS's Food Loss Data Help Inform the Food Waste Discussion," USDA Economic Research Service (June 3, 2013), http://www.ers.usda.gov/amber-waves/2013-june/ers-food-loss-data-help-inform-the-food-waste-discussion.aspx#.UgpRwdLBNIV.
[62] Ibid.
[63] Dana Gunders, "Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill," Natural Resources Defense Council (August 2012): 4, http://www.nrdc.org/food/files/wasted-food-IP.pdf.
[64] Ibid.
[65] "North Carolina 2012 Food Waste Generation Study," North Carolina Department of Environment and Natural Resources (August 2012): 3, http://portal.ncdenr.org/c/document_library/get_file?uuid=ae965d91-c5a1-47aa-8f09-9afbbfa6598f&groupId=38322.
[66] Ibid, 5.

food waste, with supermarkets representing the largest single generation source of food waste at 106 annual tons of food waste per store.[67] In South Carolina, the Department of Health and Environmental Control estimates that the state recycles 1,624 tons of food scraps and 28,952 tons of cooking oil per year, but there is no data at this time on the amount of food waste actually generated within the state.[68]

NC DENR estimates that Mecklenburg County, as North Carolina's most populous county, generates more food waste than any other county in the state at approximately 108,781 tons of municipal solid food waste per year.[69] Food waste is estimated to constitute as much as 15 percent of the total municipal solid waste disposed in Mecklenburg County.[70] However, Mecklenburg County has demonstrated a continuous commitment to waste reduction within the county and is known for its innovative waste reduction and recycling education programs. According to the county's 2012 Solid Waste Management Plan, Mecklenburg County has already achieved an overall waste reduction rate of 40 percent from its baseline year of FY 1998/1999.[71] The county seeks to reduce its overall waste by 58 percent by FY 2021/2022, and county officials recognize that increased food waste diversion is essential to reaching this goal.[72] Food waste statistics for each county in the project region are available in the "County Snapshots" section of this report.

There are various potential means of improving food waste diversion within the CONNECT Our Future project region including edible food recovery, composting, and anaerobic digestion facilities; each of these solutions involves a combination of public and private commitment. The following is an illustration of how some of these solutions are already being employed in the region, as well as areas where there is potential for improvement.

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[67] Ibid, 3.

[68] "South Carolina Solid Waste Management Annual Report for Fiscal Year 2012," South Carolina Department of Health and Environmental Control (2012): 26, http://www.scdhec.gov/environment/lwm/recycle/pubs/swm_FY12_ALL.pdf.

[69] "North Carolina 2012 Food Waste Generation Study," North Carolina Department of Environment and Natural Resources (August 2012): 16, http://portal.ncdenr.org/c/document_library/get_file?uuid=ae965d91-c5a1-47aa-8f09-9afbbfa6598f&groupId=38322.

[70] "Mecklenburg County Solid Waste Management Plan 2012-2022," HDR Engineering Inc. of the Carolinas (prepared for Mecklenburg County Land Use and Environmental Services Agency, 2012): 5-2, http://charmeck.org/mecklenburg/county/SolidWaste/ManagementPlan/Documents/MeckCoSolidWasteMgmtPlanJune2012.pdf.

[71] Ibid, 2-19.

[72] Ibid, 2-19, 2-20.

EDIBLE FOOD RECOVERY

COMMUNITY FOOD BANKS AND SOUP KITCHENS

One means of reducing food waste involves the recovery of fresh or prepared food that is suitable for human consumption, often through donation by commercial food businesses to food banks or soup kitchens. Donated items may include unserved food items from restaurants, unsold produce, dairy, and deli items from grocers, unused food from catered events, day-old baked goods from bakeries, and so forth.

There are several food banks providing food to those in need throughout the project region, including Angels and Sparrows, Charlotte Rescue Mission, Dilworth Soup Kitchen, Friendship Trays, Loaves and Fishes, Second Harvest, and Urban Ministry in Mecklenburg County, as well as several other such organizations in neighboring counties. A recent study found that food banks and soup kitchens distribute an estimated 2,100 tons of donated perishable food per year in Mecklenburg County.[73] The redistribution of edible food through community food banks and soup kitchens constitutes an important part of the food waste solution throughout the Charlotte metropolitan region.

GLEANING

Gleaning is the act of collecting leftover crops from farmers' fields after they have been commercially harvested or on fields where it is not economically profitable to harvest. Because this food would otherwise be left to rot in the fields or plowed under after harvest, some growers allow crews of gleaners to salvage any remaining produce from their fields and orchards after the harvest and deliver it to those in need. There are various reasons that food may be left behind in fields. According to Marilyn Marks, former gleaning coordinator for the Society of St. Andrew's North Carolina office, "The market may have moved on a grower and he can't pay his workers to get the food. Or food that may be too ripe by the time it gets to market may not get picked. Sometimes food is too damaged to sell, but not to eat."[74]

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[73] "Mecklenburg County NC Food Waste Diversion Study Final Report," Kessler Consulting, Inc. (prepared for Mecklenburg County Solid Waste, March 2012): 3, http://charmeck.org/mecklenburg/county/solidwaste/homecomposting/documents/food%20waste%20diversion%20study%20final.pdf.

[74] Lisa Moore, "The Gleaning Network – Gathering Local Crops to End Hunger," Natural Awakenings, accessed November 8, 2008, http://awakeningcharlotte.com/2008/11/08/the-gleaning-network-%E2%80%93-gathering-local-crops-to-end-hunger/.

Opportunities for gleaning do exist in the project area. The Society of St. Andrew operates a statewide, volunteer-driven Gleaning Network in both North and South Carolina that coordinates with local farmers, volunteers, and food-providing agencies. Volunteers include groups from various church denominations, synagogues, youth groups, other civic organizations, and individuals. The Society of St. Andrew estimates that its North Carolina Gleaning Network salvages over five million pounds of fresh produce for the hungry each year, and that more than 143 million pounds of fresh produce have reached people in need in North Carolina and South Carolina since the Society of St. Andrew opened a North Carolina regional office in 1992.[75] This impact has been accomplished through the Gleaning Network, the Potato and Produce Project, and the Seed Potato Project, and has resulted in over 429 million servings of food delivered to neighbors in need.[76, 77]

The practice of gleaning is not limited to the farm. The Society of St. Andrew's North Carolina Gleaning Network also salvages surplus produce from vendors at the end of farmers markets and gleans packing houses for produce that does not meet size or appearance requirements. Some gleaning organizations, such as the Glean for the City project in Washington, DC, salvage produce from individuals who may have surplus food to give away from their private gardens or CSA shares.[78] This practice could also be incorporated into gleaning programs by organizations in the CONNECT Our Future project area.

Gleaning is being modernized throughout the country by social media and technological developments such as Crop Mobster, a website launched in California in March of 2013 to link surplus produce with people involved with food production, hunger relief, and those who want to buy local. Other websites and "apps" are emerging to assist in diverting edible food from municipal waste streams across the country, for example, by connecting large farms with food banks or helping grocery chains to cheaply market edible produce that does not meet the size

[75] "Serving North Carolina and South Carolina," Society of St. Andrew, North Carolina, accessed November 4, 2013, http://www.endhunger.org/nc/.
[76] Ibid.
[77] Since 1984, North Carolina farmers have been eligible for a tax credit worth up to 10 percent of the value of gleaned crops donated to charity. However, this tax credit was repealed by the North Carolina legislature in 2013 and will no longer be available to farmers as of January 1, 2014; Jean Blish Siers, "In the N.C. Tax Plan, a Shocking Grab from the Needy," Charlotte Observer, accessed July 24, 2013, http://www.charlotteobserver.com/2013/07/24/4187602/in-the-nc-tax-plan-a-shocking.html#.UoJZq3DBNv4.
[78] "Glean for City: A Project of Bread for the City," Bread for the City, accessed November 4, 2013, http://www.breadforthecity.org/gleanforthecity/.

and quality standards for sale in U.S. supermarkets.[79] These innovative tools and social media technologies could also be employed in the project region to further improve the effectiveness of gleaning to reduce food waste in Charlotte and the surrounding counties.

LIVESTOCK FEED OPERATIONS

There are also options for food recovery in the project area involving livestock, whereby food scraps and byproducts may be collected and processed to feed livestock or to produce livestock feed products. These practices may be an appropriate means to divert items that are unsuitable for human consumption such as food prep waste, plate waste, and unpackaged or out-of-date food. There are approximately forty licensed "garbage feeder" operations (feeding food waste to swine) in the state of North Carolina, and one of these is located near the project region in Catawba County.[80]

COMPOSTING

For food waste that is not suitable for human or animal consumption, other opportunities remain to sustainably dispose of and convert that waste into valuable resources for the project region. One such method is composting, which not only diverts food waste from landfills, but also breaks down organic waste to produce nutrient-rich soil. By increasing erosion resistance, water-holding capacity, and gas exchange, compost can restore fertility to depleted soils and even raise the value of farmland, supporting local economies in the process. Across the country and in the CONNECT Our Future project region, both commercial and residential composting programs are emerging as an alternative for food waste disposal. Following are examples of composting initiatives taking place in the project region.

CHARLOTTE-DOUGLAS INTERNATIONAL AIRPORT VERMI-COMPOSTING PROGRAM

The most prominent example of composting in the project area is the innovative vermi-composting program instituted at the Charlotte-Douglas International Airport (CDIA) in 2012. Housed in a 30,000 square foot building, the CDIA's vermi-composting system uses worms to process the airport's organic refuse into nutrient-rich compost. Twenty-five tons of trash a day tumbles onto a conveyor belt where employees manually separate food waste derived from

[79] Rachel Dornhelm, "Social Media Helps Farmers Avoid Food Waste," Voice of America, accessed July 23, 2013, http://www.voanews.com/content/social-media-helps-farmers-avoid-food-waste/1707814.html.
[80] Mecklenburg County NC Food Waste Diversion Study Final Report, Kessler Consulting, Inc., 20.

airport restaurants, trash cans, and airplanes from the airport's non-compostable waste.[81] Once the waste streams are separated, recyclables are crushed, baled, and sold, and the organic waste is heated in a giant rotating drum at 160 degrees for three days to kill microbes and pre-compost the trash.[82] Finally, the organic waste is added to a 50-foot-long composting bin where it is processed by 1.9 million red wiggler worms. Officials estimate that the worms can process up to two tons of airport waste daily.[83]

While it cost $1.2 million to launch the program, airport officials expect the airport's vermi-composting operation to be profitable in five years.[84] Aviation Director Jerry Orr has said that the cost of operating the recycling center is about $425,000 per year, but the airport typically pays approximately $900,000 per year for its trash to be hauled away.[85] The composting program has allowed the airport to reduce its waste levels by 70 percent, thus achieving significant savings in waste hauling and landfill fees.[86] In addition, the worms' nitrogen-rich castings will be used to fertilize the airport's six thousand acres of grounds, enabling the airport to save money in fertilizer costs, and officials anticipate being able to sell excess compost to area gardeners at some point in the future.[87]

RESIDENTIAL FOOD WASTE COMPOSTING

Estimated at 65,853 tons per year, residential food waste in Mecklenburg County comprises a significant waste stream with ample potential for diversion.[88] In a Food Waste Diversion study commissioned by Mecklenburg County in 2012, Kessler Consulting, Inc. (KCI) found that a mere two to five percent of residential food waste is being recovered through home composting in the county, and a comprehensive residential food waste recovery program could capture another 13,900 to 27,800 tons per year of food waste.[89]

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[81] Julie Rose, "One Airport's Trash Is 2 Million Worms' Treasure," National Public Radio, last modified December 18, 2012, http://www.npr.org/blogs/thesalt/2012/12/20/167529920/one-airports-trash-is-2-million-worms-treasure.
[82] Ely Portillo, "Worms Munching on Travelers' Trash at Charlotte Airport," Charlotte Observer, last modified November 2, 2012, http://www.charlotteobserver.com/2012/11/01/3637568/worms-munching-on-travelers-trash.html#storylink=cpy.
[83] Sarah Shultz, "Charlotte Airport Opens Worm Composting Facility," Care 2 Make a Difference, last modified January 1, 2013, http://www.care2.com/greenliving/charlotte-airport-opens-worm-composting-facility.html.
[84] Ibid.
[85] Ely Portillo, "Worms Munching on Travelers' Trash at Charlotte Airport."
[86] Sarah Shultz, "Charlotte Airport Opens Worm Composting Facility."
[87] Ibid.
[88] "North Carolina 2012 Food Waste Generation Study," North Carolina Department of Environment and Natural Resources, 16.
[89] "Mecklenburg County NC Food Waste Diversion Study Final Report," Kessler Consulting, Inc., 4.

MUNICIPAL COMPOSTING OPTIONS

While some municipalities across the nation such as San Francisco, California and Portland, Oregon have adopted residential food waste collection and composting programs, none of the counties within the project region have adopted such a program. Mecklenburg County has instituted county-wide residential curbside recycling and single family residential yard trimmings collection[90]; it operates four facilities, which accept residential, commercial, and industrial yard waste.[91] However, the county's compost facility, Compost Central, is not permitted to process food scraps, which means the county cannot collect or accept food waste.[92, 93]

While Mecklenburg County does not have a program in place to collect or accept residential food waste for composting, it launched the Mecklenburg County Organic Waste Reduction Program aimed at providing residents with training for home composting in 1993.[94] In 2010, the initiative was renamed to Mecklenburg County's Home Composting Program.[95] Through this program, the county continues to offer free workshops, which expose students to various methods of residential composting and organic waste reduction. The county also provides a more in-depth Master Composter Program, which teaches advanced technologies of residential and commercial composting and offers on-site visits to commercial composting facilities and compost farms in the area. Results of the 2010 Charlotte-Mecklenburg Annual Survey conducted by Mecklenburg County's Land Use and Environmental Services Agency indicated that 42 percent of residents surveyed were aware of this program.[96]

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[90] "Mecklenburg County Solid Waste Management Plan 2012-2022," HDR Engineering Inc. of the Carolinas, 1-1.
[91] "Waste Reduction in Mecklenburg County," Mecklenburg County, NC Solid Waste and Recycling, accessed November 7, 2013, http://charmeck.org/mecklenburg/county/SolidWaste/Compost-YardWaste/Pages/default.aspx.
[92] "Mecklenburg County Solid Waste Management Plan 2012-2022," HDR Engineering Inc. of the Carolinas, 5-2.
[93] Compost Central is currently located directly south of Charlotte-Douglas International Airport on roughly 60 acres of property owned by the City of Charlotte. The County has operated Compost Central at this location since 1992 under a land lease agreement with the City. It will need to move the facility by 2015, however, because the airport is expanding its facilities in a way that would essentially bisect the parcel where Compost Central currently operates. The proposed new location for Compost Central operations (and the adjacent West Mecklenburg Recycling Center) is a 50-acre parcel bounded by Rozzelles Ferry Road, Valleydale Road, and Fred Alexander Boulevard in Charlotte. ("Mecklenburg County Compost Central Relocation - Frequently Asked Questions," Mecklenburg County, NC Solid Waste and Recycling, accessed November 7, 2013, http://charmeck.org/mecklenburg/county/SolidWaste/Compost%20Central%20Relocation/Documents/WOW_CCR_FAQ.pdf.)
[94] "Mecklenburg County Solid Waste Management Plan 2012-2022," HDR Engineering Inc. of the Carolinas, 3-9.
[95] Ibid.
[96] Ibid, 5-5.

The 2012 Mecklenburg County Solid Waste Management Plan noted that a survey was distributed to the seven municipalities in Mecklenburg County to identify collection programs with the potential to include a food scraps diversion program.[97] As the only municipality with automated collection and cart service through Advanced Disposal, the Town of Huntersville in Mecklenburg County may be the best candidate for a potential residential food scraps pilot study in the future.[98] The Town of Huntersville has indicated it would consider further discussions regarding the possibility of a residential pilot study.[99]

In addition, focus group participants mentioned a composting facility in Cabarrus County. The facility accepts yard waste from residents and small businesses, as well as the Cities of Concord and Kannapolis. It is operated through a public-private partnership between the county and Agromatters LLC, which hopes to receive a Type 3 compost operating permit from the NC DENR in 2014. The permit would allow them to accept certain types of agricultural waste, meat, and post-consumer food wastes. County staff hopes to eventually utilize the compost at the Elma C. Lomax Incubator Farm.

PRIVATE COMPOSTING OPTIONS

In cities where there is no municipal program to collect or accept food waste, private entrepreneurs are emerging to fill this need. CompostNow, based in Raleigh, is one such company. CompostNow provides curbside collection of organic and compostable materials to residences and small businesses for a weekly or monthly fee, providing its clients with a clean bin each week to store food waste and other compostable items and then collecting this waste weekly for composting. CompostNow offers clients the option of receiving composted soil to use in home gardening or donating it to a local community garden. CompostNow currently services the Triangle area and Asheville in North Carolina but plans to expand services to Charlotte within the near future.[100]

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[97] Ibid.
[98] Ibid.
[99] Ibid.
[100] “CompostNow Community Compost Shuttle,” CompostNow, accessed November 7, 2013, http://compostnow.org/.

COMMERCIAL FOOD WASTE COMPOSTING

The NC DENR estimates that Mecklenburg County generates 55,680 tons of commercial food waste per year.[101] According to the NC DENR's North Carolina 2012 Food Waste Generation Study, North Carolina's retail food industry, including restaurants and supermarkets, is "a major generator of food waste and a visible target for segregated food waste collection."[102] While supermarkets and grocery stores generate the most waste on a per-store basis, the restaurant industry is the largest commercial generator of overall food waste throughout the state.[103] KCI's Food Waste Diversion study found that there is an unmet need for commercial waste recovery in Mecklenburg County, as well as a strong willingness among major commercial food waste generators to consider food waste recovery options.[104]

MUNICIPAL COMPOSTING OPTIONS

While there are no municipal composting programs available to commercial waste generators in the CONNECT Our Future project region, Charleston County in South Carolina has instituted a Commercial Food Waste Composting Program which could serve as a model for counties in the Charlotte metropolitan region. Charleston County instituted the program as a pilot program in 2010 and received an operating permit to process food waste in June 2012.[105]

Charleston County's composting program gives local businesses the opportunity to reduce their overall waste disposal costs by contracting for collection with specified collectors to divert organic material from their waste streams.[106] Charleston County Government does not collect or haul food waste directly but lists five collection partners on its website who can transport food waste for composting to the county's Bees Ferry Compost Facility for a negotiated fee.[107] Finished compost may be purchased by the bag or in bulk at the county's compost facility, allowing South Carolina's Environmental Management Department to receive an economic benefit through its sale.[108]

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[101] "North Carolina 2012 Food Waste Generation Study," North Carolina Department of Environment and Natural Resources, 16.
[102] Ibid, 9.
[103] Ibid.
[104] "Mecklenburg County NC Food Waste Diversion Study Final Report," Kessler Consulting, Inc., 3.
[105] "Commercial Food Waste Composting Program," Charleston County South Carolina Online, accessed November 7, 2013, http://www.charlestoncounty.org/departments/solidwaste/food-waste-composting-information.htm.
[106] Ibid.
[107] Ibid.
[108] Ibid.

According to Mecklenburg County's 2012 Solid Waste Management Plan, an estimated 67,000 tons per year of unused capacity exists between Compost Central and the county's private composting facilities, which would provide enough capacity for a food scraps diversion pilot study in the commercial sector.[109]

PRIVATE COMPOSTING OPTIONS

There are a number of private sector food waste composters located throughout the Charlotte region. According to Mecklenburg County's 2012 Solid Waste Management Plan, there are currently ten private facilities that recycle organic matter within and around Mecklenburg County.[110] These existing composting operations already work with commercial generators in the Charlotte metropolitan region to divert over 36,000 tons of food waste from landfill disposal each year.[111]

In its 2012 Food Waste Diversion study, KCI surveyed seven of the private organic recycling facilities in the Charlotte metropolitan area and found that four facilities were interested in receiving new sources of food waste and had the ability to expand their operations for this purpose.[112] The study found that existing facilities had an estimated 30,400 tons per year of unused capacity.[113] However, the study also showed that almost all of this total potential capacity could be attributed to two facilities: Earth Farms in Gaston County and Wallace Farm in Mecklenburg County.[114] Of these two sites, Wallace Farm's food waste capacity after 2015 is uncertain due to a legal settlement and their need to find a new location for food waste composting.[115]

ANAEROBIC DIGESTION FACILITIES

Anaerobic digestion is another option for processing food waste. Anaerobic digestion is a biological process in which microorganisms are used to break down organic materials in an oxygen-deficient environment, creating a biogas that consists primarily of methane and carbon

[109] "Mecklenburg County Solid Waste Management Plan 2012-2022," HDR Engineering Inc. of the Carolinas, 5-5.
[110] Ibid, 5-24.
[111] "Mecklenburg County NC Food Waste Diversion Study Final Report," Kessler Consulting, Inc., 3.
[112] Ibid, 21.
[113] Ibid.
[114] Ibid.
[115] Ibid.

dioxide.[116] The biogas produced by anaerobic digestion can be used to produce electricity or can be converted into a transportation fuel.[117] In addition, the remaining semi-solid digestate (comprised of less digestible material) can be sent to a compost facility for further processing.[118] With a proper feedstock, anaerobic digestion can reduce waste volumes by approximately 70 percent, providing energy and compost feedstocks in the process.[119]

According to KCI's 2012 Food Waste Diversion study, two private anaerobic digestion companies are considering developing commercial scale facilities in or near the CONNECT Our Future project region. If one of these facilities is developed, it could potentially consume some 30,000 tons per year of food waste drawn from a wide radius around Mecklenburg County.[120] In its 2012 Solid Waste Management Plan, Mecklenburg County noted that W2E Columbia LLC reportedly received a solid waste permit from the South Carolina Department of Health and Environmental Control in 2011, paving the way for a $12 million anaerobic digestion facility to be built in Columbia, South Carolina.[121] The county's Waste Management Plan also noted that the company is planning for an additional facility in Gastonia, North Carolina in the near future.[122]

[116] "Mecklenburg County Solid Waste Management Plan 2012-2022," HDR Engineering Inc. of the Carolinas, 5-26.
[117] Ibid.
[118] Ibid.
[119] Ibid.
[120] "Mecklenburg County NC Food Waste Diversion Study Final Report," Kessler Consulting, Inc., 22.
[121] "Mecklenburg County Solid Waste Management Plan 2012-2022," HDR Engineering Inc. of the Carolinas, 5-24.
[122] Ibid.

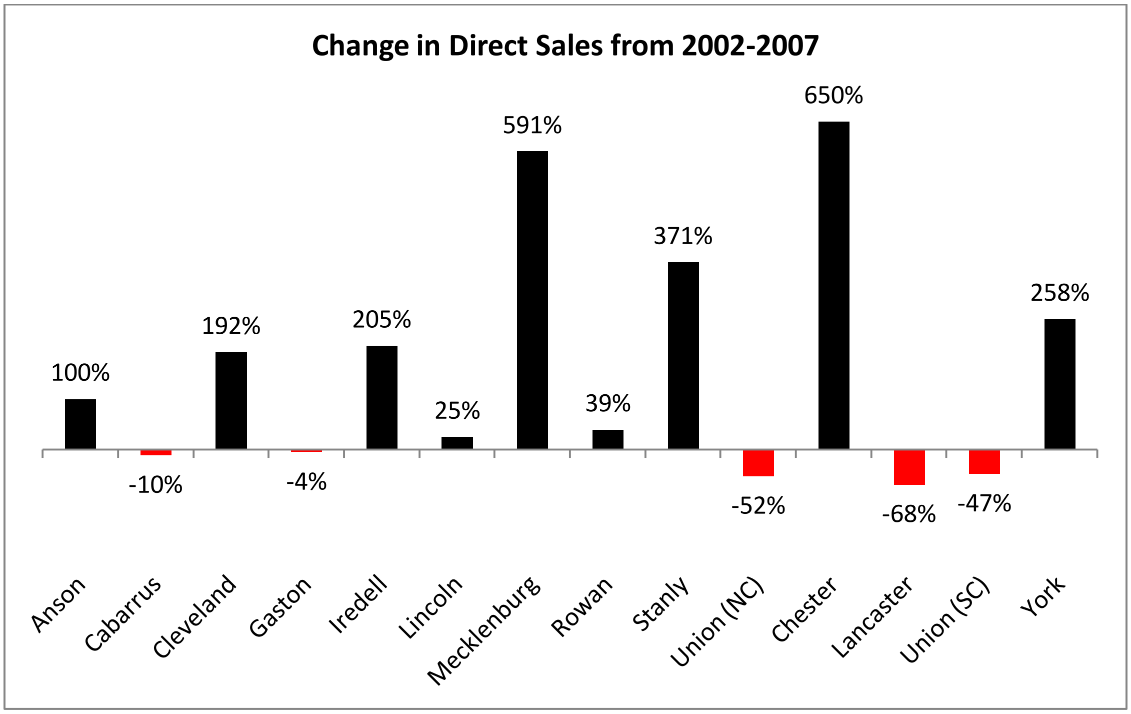
SECTION 3: REGIONAL LOCAL FOOD DEMAND

As related previously, according to a 2013 report from USDA, national local food sales through direct and intermediate markets, worth an estimated $1 billion in 2005, grew to $4.8 billion in 2007 and reached nearly $7 billion in 2012. Agricultural Census data for 2007 further shows an increase in the number of farms, particularly small farms (those less than 50 acres), which reverses a decades-long trend. Both trends reflect the rapidly growing consumer interest in knowing who is growing their food. National market research by firms like the Hartman Group and JWT Advertising have tracked the shift in consumer demand to favor locally grown foods, and according to one estimate, national local food sales have doubled to $11 billion over the past ten years.[123]

Evidence of the interest in local food in the CONNECT Our Future project region can be seen in the growth in the number of venues offering local food products. Figure 8, for example, shows the growth of direct sales in each of the counties in the project region. As a whole, the 14 counties experienced a 103 percent increase in direct sales from 2002 to 2007, going from $1.8 million dollars to nearly $3.7 million dollars.

[123] "As Americans Rush to Fresh Food, Supermarket Chains Follow," CNBC, last modified October 8, 2012, http://www.cnbc.com/id/49101716.

FIGURE 8. CHANGE IN DIRECT SALES FROM 2002-2007[124]



In addition to direct sales to consumers through farmers markets, roadside stands, CSAs, and u-pick operations, local restaurants and grocers are beginning to source products from local farms to satisfy demand from their customers. In a 2013 local food market assessment of the Charlotte Metropolitan Area, Mecklenburg County Cooperative Extension agent Kristen Davis noted:

> The interest of Charlotte-area consumers for local food has increased. As a result, we are experiencing an increase in restaurants who are sourcing local food for their menus, community supported agriculture opportunities, and interest in home-based and small businesses that utilize locally sourced produce and meats.[125]

[124] 2007 Census of Agriculture data.

[125] "An Assessment of the Market for Locally Produced Foods in the Charlotte Metropolitan Area," Smithson Mills Inc., (Asheville, NC: 2013): 6.

Charlotte-Mecklenburg Food Policy Council director Anna Brown expressed similar sentiments saying:

> We have an extensive network of farmers markets. There are also businesses like Go Local NC Farms with delivery and pick-up options. There are several restaurants that source locally, but certainly [there is] room for growth.[126]

In this context, area resources have sprung up to help consumers access the local food products they desire, including the online local food directory Grow Charlotte[127] and local farm listings on the Slow Food Charlotte website.[128] The momentum around the idea of local markets serving local products in the Greater Charlotte area is a clear manifestation of consumer desire for local.

RESIDENT FOOD CONSUMPTION AND SPENDING

This section focuses on fresh produce consumption. Fresh produce requires little processing and is therefore more easily produced and marketed through local marketing channels.[129] For this reason, a focus on fresh produce consumption and production will yield the most practical assessment of the potential for immediate local food system expansion in the project region.

Based on 2012 population estimates, the residents of the CONNECT Our Future project region spend $5.8 billion per year on food. Regional estimates indicate that the average household in the southern U.S. spends 59 percent of total food expenditures on food consumed at home and the remaining 41 percent on food consumed away from home. For the project region, where 2.5 million residents equals an estimated 1 million households, this figure breaks down to $3.4 billion spent on food consumed at home and $2.4 billion spent on food consumed away from home.

Looking at Table 9, in 2012 the estimated retail value of resident spending in the project region on a selected variety of fruits and vegetables that can be grown in the region totaled $763.2 million dollars or about 13 percent of total food purchasing. In comparison, farms in the project

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[126] Ibid.
[127] "Grow Charlotte," accessed November 7, 2013, http://www.growcharlotte.com/.
[128] "Slow Food Charlotte," accessed November 7, 2013, http://slowfoodcharlotte.org/farms.
[129] Steve Martinez et al., "Local Food Systems: Concepts, Impacts, and Issues," USDA Economic Research Service (2010): 97, http://www.ers.usda.gov/media/122868/err97_1_.pdf.

region produced an estimated retail equivalent of around $100 million dollars of the same fruit and vegetable products. The difference between $763.2 million dollars in spending and $100 million dollars of local product represents an opportunity for an expansion of local fruit and vegetable production and local food sales in the CONNECT Our Future region.

TABLE 9. ESTIMATED RESIDENT CONSUMPTION AND SPENDING, AND ESTIMATED FARM PRODUCTION OF SELECTED FRESH FRUITS AND VEGETABLES IN THE PROJECT REGION

	Pounds consumed by residents per year	**Estimated retail value of resident consumption**	**Estimated retail value of current farm production**	***Estimated spending minus estimated value of production***
Apples	38.8M	$57.8M	$5.2M	*$52.6* M
Blackberries	226,000	$1.2M	$3.1M	*($-1.9M)*
Grapes	20.5M	$39.8M	$1.6M	*$38.2*M
Cantaloupe	21.5M	$12.9M	$1.1M	*$11.8*M
Peaches	11.9M	$18.2M	$15.6M	*$2.6* M
Pears	7.3M	$10.3M	$520,600	*$9.8*M
Lima beans	50,200	$97.9M	$8,200	*$97.9* M
Snap beans	4.7M	$9.2M	$242,200	*$9* M
Sweet Corn	21.4M	$22.1M	$2M	*$20.1*M
Cucumbers	17M	$27.2M	$1.9M	*$25.3* M
Collards	1.6M	$2.8M	$272,600	*$2.5* M
Lettuce	67.4M	$93.7M	$101,000	*$93.6* M
Nuts	10M	$51M	$2.7M	*$48.3*M
Okra	978,600	$3M	$840,000	*$2.2*M
Bell peppers	24.9M	$49.7M	$320,000	*$49.4*M
Potatoes	89.3M	$60.7M	$407,100	*$60.3* M
Pumpkins	11.3Mn	$10.6M	$2.3M	*$8.3* M
Squash	10.8M	$15.6M	$20.3M	*($-4.7* M)
Strawberries	18.3M	$44M	$3.1M	*$40.9*M
Tomatoes	52.4M	$118M	$36M	*$82*M
Watermelon	38.9M	$17.5M	$2.8M	*$14.7*M

FOOD DOLLAR CONSIDERATIONS

The percentage of each dollar spent on food that goes to the farmer who produced it differs depending on where food is purchased. For instance, if a farmer sells a product directly to a consumer – at a farmers market, through a CSA, or at a roadside stand – the farmer retains all earnings from that product (though they may have more costs, in labor and marketing for example). On the other hand, in the case of grocery store spending, an average of only $0.18 of every dollar spent on food goes directly to the farmer. The rest of the dollar pays for the processing, energy, packaging, advertising, salaries, and other expenses that went into getting the product from the farm to the shopper's grocery bag. It should be noted that the average proportion of the food dollar a farmer receives varies by product. For example, farmers retain an average of $0.28 for every dollar spent on fresh fruits and vegetables, but only $0.17 for processed fruits and vegetables (like canned fruit or juice).[130]

For away-from-home spending, including food purchases at restaurants, hospitals, parks, workplaces, etc., the average proportion of each food dollar that goes to the farmer decreases significantly to just $0.03. The majority of the food dollar that makes up away-from-home spending goes toward labor ($0.74). In terms of the local economy, this means that significant percentages of every retail dollar spent in a local restaurant or grocery store may already be in the local economy in the form of payroll for local employees. Accordingly, calculations of the economic impact of localizing food systems need to be grounded in food dollar economics. While localizing a community's food system will affect the local economy, transitioning to a more locally based food system will not shift the entire food dollar; much of that is already present in the form of community wages. Nevertheless, there are financial benefits that can accrue to local producers and locally owned businesses with the development of local market opportunities.

The impacts of consumer food spending on the local food and farm economy lies in the potential of local sales to increase returns to individual farmers and to keep more of the food dollar with locally owned businesses. Since demand for food stays relatively constant (i.e., there is only so much food people can consume), the primary way for food producers to increase their proportion of earnings is to take over other sectors of the food dollar. For example in the case of direct marketing, a producer grows, transports, packages, markets, and sells his or her

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[130] Randy Schnepf, "Farm-to-Food Price Dynamics," Congressional Research Service (Washington DC: 2013), www.fas.org/sgp/crs/misc/R40621.pdf.

own product and, accordingly, is able to retain 100 percent of the food dollar. In this way, producers can capture a larger proportion of the food dollar by strategically marketing their products to the local population of consumers and food businesses, and can earn larger returns for their products. Likewise, locally owned businesses keep a higher percentage of the food dollar in the local economy by not exporting a percentage of their profits to parent companies that may not be located within the region.

There are benefits other than direct economic impact that accrue to both farms and communities when food systems become localized in the form of improved health, support for local businesses, community vitality and resilience, open space, quality of life, etc. When people become knowledgeable of the food system and begin to understand where their food comes from, extra-economic factors like these are more likely to be elevated and to inform consumer purchases and the price they are willing to pay to uphold these benefits.

RECOMMENDATIONS

This section discusses a number of key areas of opportunity for local food systems development in the project region. The recommendations presented are options, and some are more easily implemented than others. Given regional priorities and resources, stakeholders in the CONNECT Our Future region must decide which recommendations are appropriate for implementation. The Action Plan for Food Systems Improvement articulates specific steps for county and regional food policy councils to prioritize and implement.

BRING FOOD SYSTEM ISSUES TO THE FOREFRONT OF LOCAL GOVERNMENT

Food system elements intersect with everything from land and water use planning to transportation, retail development, and waste management. For this reason, it is imperative that policies and regulations related to the functioning of the region's developing local food system be considered and reviewed to ensure that the region has a supportive atmosphere for farm and food enterprises.

Decision-makers at all levels can engage in innovative agricultural policymaking to create supportive environments for farming and local food sales. An important first step for community stakeholders is to review regulations already in place that may be hindering the production or sale of locally produced farm products and to determine which regulations may need to be modified to allow farm businesses to adapt, innovate, and grow. A growing number of planning tools and legal constructs may be employed to support local food system development, including Voluntary Agricultural Districts (VADS), Present Use Value (PUV) taxing, Extraterritorial Jurisdiction (ETJ), Purchase of Agricultural Conservation Easement (PACE), and Comprehensive Farmland Preservation Plans.[131] Many of these tools are already being employed in North Carolina and South Carolina and could also be utilized or enhanced by policy-makers within the CONNECT Our Future project region.

Government bodies also have a unique opportunity to influence community health and food access through policy development. For example, to increase fresh food access, local

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[131] These terms are further defined in Appendix B: Local Food System Development in Region.

government can assist in covering the initial costs of establishing Electronic Benefit Transfer (EBT) terminals at local farmers markets so that the markets can accept Supplemental Nutrition Assistance Program (SNAP) benefits. Local government can also ease the burden of creating and maintaining community gardens by offering property tax exemptions to established plots or can examine laws that may prohibit residents from engaging in other agricultural pursuits (e.g., keeping chickens or bees) within city limits. With any policy-related decisions aimed at increasing food access and community health, policy makers should be especially judicious and thorough in their research in order to maximize opportunities for success and avoid the potential for unintended consequences.

SUPPORT FARMERS AND LOCAL FOOD PRODUCTION

In the context of a developing local food economy, providing farms with support is essential. Supplying local food products to residents in the CONNECT Our Future region will require a diversity of farms (defined by size and production capacity, products grown or raised, farm infrastructure, etc.) to supply a diversity of market outlets with different requirements.

Small farms in the region – from 1 to 49 acres – are emerging in an environment of increasing demand for locally grown food and interest in experiencing local agriculture. Small farms, in particular, are well positioned to be innovative and respond to the demands of the local market. Often relying on direct sales, small farms supply their products to residents and visitors via farmers markets, CSAs, roadside stands, and small businesses. At the same time, the data show that a large proportion of the region's small farms are losing money. While the emergence of small farms offers a promising countertrend to the loss of larger scale farms in the region, the increase will only be maintained if farms can become and stay successful and profitable.

Mid-sized and larger scale farms (50+ acres) have the production capacity to reach larger retail markets like grocery stores and schools. These farms are also important to a developing local food system, because they are able to supply the markets where the majority residents and visitors purchase food. The data, however, show that in the CONNECT Our Future project region the number of farms in these categories are declining.

For all sizes of farms, farmers need a combination of skills, resources, and support to access the opportunities in local markets successfully. Farmers need training and expertise in business and market planning to effectively diversify their farm businesses and to market their farm products locally. Farmers need to understand industry standards for different types of local market outlets: packaging, labeling, food safety requirements, distribution, quality standards, trace-back standards, etc. Furthermore, farmers need assistance determining what types of market outlets are a good match for the capacity of their farm. For retail, wholesale, and institutional outlets in particular, farmers need assistance developing relationships with buyers and information specific to market requirements and desires. This combination of assistance provides farmers with the support needed to make decisions and implement practices based on careful planning. Decisions based in planning reduce risk and increase the likelihood that strategies are successful.

Focus group discussions with area agriculture and food system stakeholders revealed existing programs in the region that currently provide valuable training for new farmers. Examples include the Elma C. Lomax Incubator Farm in Cabarrus County, Slow Food Charlotte's Soil Fertility Workshop, and North Carolina's REAL Entrepreneurship program, which offers agriculture classes through community colleges in the region. To continue to support farmers and local food production in the project region, one important step will be to collaborate with groups that already have the resources and knowledge needed to help new and beginning farmers, and to find ways to help them expand their capacity and reach more individuals.

CONNECT RESIDENTS TO THEIR FOOD SYSTEM

ENGAGE COMMUNITY MEMBERS WITH LOCAL FARMS AND FOOD

Citizens who actively participate in and understand local agriculture will become advocates for local food and farms and will provide the foundation for continued development of the region's food system. Rich learning environments focused on local food and experiential instruction will promote healthy eating and positive associations with healthy food, leading to lifelong healthier eating and lifestyle habits. Surveys of the region's local food and farm stakeholders found that community leaders believe outreach and education about local food and local farms is a top priority in the CONNECT Our Future region.

Farm to School, farm tours, farmers markets and CSAs, food and farm festivals, cooking demonstrations, public gardens, and public awareness campaigns are all mediums for bringing farmers and consumers into direct contact, increasing consumer knowledge and awareness of where food comes from, how it is produced, the impacts of the food system on communities and the environment, and the relationship between food and personal health. Accordingly, funding and other kinds of support for regional programs that offer these kinds of activities, resources, and educational materials to community members is essential.

SUPPORT DIRECT MARKETING CHANNELS

Direct markets are an important piece of ongoing local food systems activities, which work synergistically with efforts to mainstream local food and expand its distribution into non-direct market outlets. Direct markets can provide the highest return to farmers and the lowest barriers to entry in comparison to other types of markets. They provide an easier starting point for farmers new to marketing because of the minimal cost required for entry. Furthermore, in providing a direct connection between consumer and farmer, they cultivate customer loyalty and advocacy for local farms and food. People shop at farmers markets not just for food, but also for the experience of interacting directly with the people that grow their food and for a sense of community. Direct markets put a face on food and bring heightened visibility to local farms and food, benefitting agriculture as a whole.

In the project region, demand for direct market products is evident from the 2007 Agricultural Census, which shows a 103 percent increase in direct food sales to just under $3.7 million in 2007 from $1.8 million in 2002. Communities within the region can support the maintenance and growth of these markets by promoting existing outlets, assisting with their expansion, or by providing workshops and training for farmers on relevant topics: salesmanship and display, food safety best-practices, food regulation, marketing, and promotion.

HELP CONSUMERS FIND LOCAL

With increasing public interest in supporting local farms and buying local food, it is vital that consumers know where to find local food across direct, retail, and institutional market settings. Demand for local can only be fulfilled if consumers can find local products and, in non-direct market settings in particular, can identify them in the midst of a crowded market environment. This can be achieved through guides, advertising, promotions, and labeling. Communities can partner with local media (television, radio, newspapers) and marketing agencies to promote what is being grown in the area and where it is being sold to community members, including existing direct-to-consumer outlets (farmers markets, CSAs, on-farm stores and stands), local grocers, restaurants, etc.

Local and state food branding can be avenues to help customers identify locally grown food, add value to local farm products, and provide farmers with a means to increase their marketing power. Several food branding programs are active in the region. These programs include the North Carolina Department of Agriculture's Goodness Grows/Got To Be NC campaign, the Piedmont Grown local food certification program based in the Piedmont region of North Carolina, and the SEED Foundation's Buy Fresh Buy Local program for North Carolina. The South

Carolina Department of Agriculture's Certified South Carolina is a popular program that brings together producers, processors, wholesalers, and retailers to promote South Carolina products and businesses.

ADDRESS EQUITY AND ACCESS IN THE FOOD SYSTEM

ADDRESS KEY BARRIERS TO EQUITY AND ACCESS

Too frequently food equity and food access are approached with the view that hunger is only a food issue (i.e., that food is too expensive), but hunger is in fact largely a poverty issue. The food system itself, in providing workers with inadequate income, is a significant source of poverty. A key step to addressing the lack of equity in the food system is to shift to solutions based on lifting people out of poverty while continuing to address the immediate needs of people in hunger. Strategies that focus on building local wealth and raising people out of poverty will increase access to healthier foods while decreasing overall inequity in the region.

Every community is unique; this uniqueness means that in each community the opportunities and means to help low-income community members access fresh, local food options will be different. Regardless of the specific conditions of individual communities, community stakeholders in the CONNECT region should investigate methods for increasing the accessibility of local fresh foods by making these foods more available in the places where low-income community members already shop, conducting community outreach about the availability of local food options, increasing awareness of where low-income community members can use their SNAP benefits to purchase local foods, and organizing opportunities to help less mobile residents access the transportation they need to shop for food. While many initiatives exist within the project region to address these issues, they often operate with inadequate resources and need additional support and coordination.

PROVIDE OUTREACH AND EDUCATION TO LOW-INCOME COMMUNITIES

Given that food choices are about more than just availability, actions in the greater Charlotte region designed to increase food access must incorporate educational and experiential components. The food system stakeholders surveyed for this assessment recognized this need, naming education and outreach as the second most pressing action needed to advance local food systems development in the region (after promoting and supporting connections between local farms and local food businesses).

Educational and experiential activities around local food provide food system stakeholders in the CONNECT project region with a means to promote equity and access in the food system. The CONNECT Our Future region is already home to several annual food and farm events (e.g., the Charlotte area's Know Your Farms Tour, the Statesville Pumpkin Fest, the York County Ag + Art Tour) and to active Farm to Institution programs. For food stakeholders in the region, a key action step is to support the existing efforts of organizations coordinating and promoting activities and events which highlight local food and farms, and to help promote these activities to *all* members of the community.

EXPAND THE KNOWLEDGE BASE AROUND YOUR COMMUNITY FOOD SYSTEM

DETERMINE THE LOCAL MESSAGES THAT RESONATE WITH THE PUBLIC

The successful implementation of a local food campaign strategy in the CONNECT Our Future project region will depend, in part, on the ability to define and promote local in a way that resonates with the public. When it comes to tapping into consumers' demand for local food, authenticity and trustworthiness of local labeling and local branding are key. The fact that there are so many existing branding programs in the CONNECT region speaks to the fact that people in this region have very different ideas about what local means and what counties/areas should be included in a local food effort. It is therefore important to conduct additional research in the region to understand how residents define local, to identify the messages and values that resonate most with them, and to determine the communications channels they use most often. Stakeholders within the CONNECT region should partner with local media to deliver clear and consistent messaging that mirrors the values and benefits that residents associate with buying local food and supporting local farms as revealed in the research findings.

CONDUCT RESEARCH TO ASSESS FOOD INFRASTRUCTURE CAPACITY

This assessment project has mapped the existence of the intermediary elements in the region's supply chain. Further research needs to be conducted to understand how food is moving around the region, what the capacity and opportunity is for these existing pieces of infrastructure to make room for local food distribution, processing, etc., and where gaps exist that may be barriers to further local food system development.

As the local food system grows, gaps in the infrastructure will need to be addressed. Infrastructure development projects like the building of a meat processing facility or a food hub are significant undertakings complicated by regulatory issues, siting difficulties, and extraordinary capital requirements. A key question to guide research into these types of projects would be: can infrastructure that may be proposed generate enough income to pay for operating costs? If infrastructure projects are unable to pay for operating costs, income streams need to be identified. If subsidized processing, aggregation, and distribution are deemed worthy of continued financial support, critical analysis should be done regarding the impact of such "market distortions" on the long-term viability of local farms and local food.

CONSIDER FOOD WASTE DIVERSION

Efficient food waste management is an important part of a healthy regional food system and can be responsible for a wide array of benefits including reduced environmental impacts, improved food access, reduced hunger, and large-scale financial savings. In addition, sustainable waste disposal systems can create economic opportunities through entrepreneurship in fields such as waste collection, composting, and anaerobic digestion, while also producing rich soil amendments and alternative fuel sources.

Improving the food waste management system in the project area will involve a suite of coordinated solutions, including new government policies and incentives, adjustments in supply-chain operation, increased public awareness, and behavioral changes among consumers. While significant improvements will ultimately require a concerted effort involving decision-makers throughout the supply chain, state, county, and local governments are uniquely poised to lead the charge through systematic policies, programs, and incentives. County governments in the project area could significantly improve the efficiency of food waste disposal in the region by setting food waste targets and implementing food waste prevention campaigns in their jurisdictions, by adopting policies that incentivize donation of edible food and composting of non-edible food waste, and by providing direction and infrastructure to enable residential and commercial food waste diversion programs. Taking steps now to improve and streamline the food waste management system within the CONNECT Our Future project region could have far-reaching and beneficial impacts on the food system for many years to come.

DEVELOP AN INTENTIONAL NETWORK TO FOSTER COMMUNICATION AND COLLABORATION

One of the key findings of this assessment, of stakeholder surveys, and of focus groups is that residents of the CONNECT Our Future project region do not tend to think of “their region” or “local” using the 14-county parameter created for this project. Instead, residents and stakeholders identify their regions according to a variety of natural and political boundaries. In order to create buy-in and acceptance of the CONNECT Our Future food systems plan, it is critical to collaborate with leaders of the smaller communities within the CONNECT region from the very beginning. Various community stakeholders (e.g., farmers, food entrepreneurs, food industry buyers, decision-makers, agriculture specialists, health and human services representatives) should be engaged in formative planning processes. Some of this work is already being done as the CONNECT Our Future project works to develop food policy councils in each of the 14 counties. Developing these groups of diverse stakeholders will promote project buy-in and simultaneously identify sources of local knowledge, capacity, and resources.

It will be up to the CONNECT Our Future project leaders to show these stakeholders the importance of collaboration and the value that participating in the project will bring to the region as a whole. Strong demand for increased local food capacity exists; it is important to empower stakeholders with the means to increase their own abilities to work effectively and to access residents’ desire to support local farms and the local economy.

As the overall CONNECT Our Future project anticipates the need for community level decision-making and collaboration as well as building on emerging and existing efforts, these recommendations are intended as general guidelines for local decision-making.

APPENDIX A: INVENTORY OF FOOD SYSTEMS ASSESSMENTS IN PROJECT REGION

NORTH CAROLINA

Abdoulayi, S., A. Arnold, et al. "Farm-to-School Programs in Southeast Central North Carolina: Feasibility Assessment and Next Steps." Chapel Hill, NC Department of City and Regional Planning, The University of North Carolina at Chapel Hill (2009). www.feastsoutheastnc.org/research/.

> This report looks at the potential for developing farm to school programs in three Southeast Central North Carolina counties: Robeson, Columbus, and Bladen counties. Using existing data, the report describes the potential economic benefits of farm to school programs as well as nutrition and health benefits for the three counties. Stakeholder interviews with Child Nutrition Directors, school board members, cafeteria staff, farmers, county extension agents, and others with an interest in farm to school were conducted to determine interest in developing a farm to school project, to identify potential resources, and to determine the capacity to utilize those resources. Additionally, the report also provides an overview of the way school food works and examines existing farm to school programs in the state. It concludes with a description of barriers and strategies and next steps for designing and implementing a farm to school program.

Andreatta, S. "Marketing Strategies and Challenges of Small-Scale Organic Producers in Central North Carolina." Culture and Agriculture 22, no. 3 (2000): 40-50.

> This paper focuses on the relationship between growers and consumers, and how the relationship is influenced directly and indirectly by long-standing cultural practices and expectations, political decisions, the actions of governmental and non-governmental agencies, and by the economic factors that influence prices of both organic and conventional foods.

Appalachian Sustainable Agriculture Project. “Opportunities for Expanding Food and Farm Tourism in Western North Carolina.” (Asheville, NC: Appalachian Sustainable Agriculture Project, 2006).
www.asapconnections.org/special/research.html.

This article discusses the history of agritourism in North Carolina and paints a picture of the current status of agritourism operations in the state. The paper also provides suggestions for ways that North Carolina-based operations can learn from agritourism operations in other states to build the industry so that it can provide greater impact to both the tourism and agriculture industries in the state.

Cabarrus County Cooperative Extension. “NC Cooperative Extension-Cabarrus County Center Producer Survey.” (Concord, NC: North Carolina Cooperative Extension Service, 2010).

This document provides the results of a survey administered to producers in Cabarrus County. Survey questions asked local animal producers about their interest in using a new slaughter facility in Concord, North Carolina and the need for value-added equipment.

Coulter, L. “Farmers market Surveys in Cabarrus County.” (2008).

This document provides a snapshot of the results of rapid market assessments conducted at three markets in Cabarrus County. The survey questions asked market customers how they heard about the market, about their overall shopping satisfaction and spending habits, and to provide information on other items they would like to purchase from the market.

Creamer, Nancy G., and Rebecca D. Dunning. “Local Food Systems for a Healthy Population.” NC Medical Journal 73, no. 4 (2012): 310–314.
www.ncmedicaljournal.com/wp-content/uploads/2012/07/NCMJ_73413_FINAL.pdf.

This journal article posits that collaboration and communication around local food initiatives across diverse sectors of North Carolina businesses, organizations, individuals, and political bodies will result in environments that support local and sustainable foods and a healthy population.

Curtis, J., N. Creamer, et al. “From Farm to Fork: A Guide to Building North Carolina's Sustainable Local Food Economy.” (Raleigh, NC: Center for Environmental Farming Systems, 2010).

A report summarizing the outcomes of CEFS statewide Farm to Fork Initiative, which engaged people and organizations across North Carolina in a process to develop key action steps to building North Carolina's food economy. The report includes nine

statewide and local recommendations for action and "spotlights" on several regional initiatives in the state working in support of local food and farms.

Cruze, S., and J. Curtis. "Cabarrus County Food System Assessment." (Raleigh, NC: Center for Environmental Farming Systems, 2011).
www.cefs.ncsu.edu/whatwedo/foodsystems/cabarruscountyfoodassessment.pdf.

A report summarizing the CEFS food system assessment for Cabarrus county. The report: (1) provides an initial evaluation of the food system in the county, 2) highlights assets and challenges within different segments of the food system, and 3) makes recommendations for action, based on secondary data collection and primary data collection in the form of over 60 stakeholder interviews.

Department of Planning and Development Iredell County. "Iredell County Land Development Code." (2011).
www.co.iredell.nc.us/Departments/Planning/forms/LDC/final/Iredell_County_LDC.pdf.

The Iredell County Land Development Code provides an example of planning document language to give special attention to local agricultural endeavors, including a focus on strategies to support farming, maintain farmland, promote regulated growth, and protect natural resources.

Estes, E., T. Kleese, et al. "An Overview of the North Carolina Organic Industry." (accessed July 19, 2010).
www4.ncsu.edu/unity/lockers/users/e/eaestes/are17.pdf.

This report provides market assessment data on the size, extent, and scope of the North Carolina organic market. The purpose of the study was to gather market-based data to inform decisions in the agricultural community about producing and selling North Carolina organic commodities. Qualitative and quantitative data were collected through interviews with representatives from retail and wholesale outlets in North Carolina. Respondents were asked to provide their opinions and views about the North Carolina organic industry and to provide data on volume, prices, and sources of produce purchased.

Flaccavento, Anthony. "Is Local Food Affordable for Ordinary Folks? A Comparison of Farmers Markets and Supermarkets in Nineteen Communities in the Southeast." (2011).
www.ruralscale.com/resources/downloads/farmers-market-study.pdf.

Author Anthony Flaccavento analyzed data from 24 farmers markets in 19 Appalachian communities and shows that when comparing the price of the least expensive item available at a farmers market and grocery store, the farmers market is more expensive

52 percent of the time. However when comparing "apples to apples," (e.g., organic apple to organic apple) farmers markets were the same or less expensive than grocery stores in 74 percent of all cases by an average of 12 percent lower cost.

Gaston County. "Countywide Farmland Protection Plan for Gaston County, North Carolina." (2009). http://gaston.ces.ncsu.edu/files/library/36/Gaston%20County%20Farmland%20Protection%20Plan%20-%20Approved%2010-22-09.doc.

As a farmland protection plan, this Gaston County document clearly identifies the value of agriculture as an asset to the county and enumerates a series of steps that can be taken to ensure the continued viability of farmland including: incentivising farmers to protect their land, encouraging inter-municipal cooperation between townships and other levels of government, educating consumers and elected officials on the relationship between local agriculture and public benefits, and developing land use policies and zoning ordinances that benefit local agriculture.

Hamrick, Debbie. "North Carolina Sustainable Local Food Advisory Council Listening Session Summary." NCSLFAC. (2013). www.ncagr.gov/localfood/documents/4-11-13/2013-Summary-Listening-Sessions.pdf.

This document contains the notes on ten listening sessions conducted by the NCSLFAC Subcommittee on Economic Development & Infrastructure with 31 partners across North Carolina. The purpose of the meetings was to hear from farmers and entrepreneurs active in the North Carolina local foods community and to support institutions and other interested parties regarding 1) regulations or policies that are barriers to continuing growth of the state's local foods economy; 2) economic development opportunities ripe for investigation and/or investment; and/or 3) forms of support and/or coordination that would benefit the state's farmers or entrepreneurs seeking to thrive in local foods.

Iredell County. "Countywide Farmland Protection Plan for Iredell County, NC." (2008). www.co.iredell.nc.us/.../Planning/forms/protectionplan_final071808.pdf.

Jackson, C. "Mountain Tailgate Market Association Marketing Initiative." (Cullowhee, NC: Mountain Tailgate Market Association, 2005). www.sare.org.

This is a final report to the Southern Sustainable Agriculture Research and Education program about a project funded in support of the Mountain Tailgate Market Association (MTMA). The project conducted group promotions through brochures, print, radio, web, and other media; develop a MTMA logo; surveyed vendors and shoppers at markets with the purpose of enhancing markets; and conducted a farmers' tailgate market workshop for other markets in the region.

Kask, Susan, and Laura Lengnick. “New Crops and Agricultural Enterprises Decision Assistance Tools.” North Carolina State University. (Raleigh, NC: Compass, 2010). www.ces.ncsu.edu/fletcher/programs/herbs/prosperity/tools/FPP-2009-new-ag-enterprise-decision-tool.pdf.

In an effort to help farmers in Western North Carolina improve the profitability of their farms, this research study identified a variety of new crops and agricultural enterprises that looked promising in the region.

Kirby, L. “Community Supported Agriculture in Western North Carolina.” (Asheville, NC: Appalachian Sustainable Agriculture Project, 2005). www.asapconnections.org/research/html.

This report details the findings of a survey administered to twelve CSA farms in the fall of 2004. Respondents were asked questions about characteristics of their CSA operation and the impact of Appalachian Sustainable Agriculture Project's work supporting CSAs.

Kirby, L. “Defining Success in the Farm-to-School Arena.” (Asheville, NC: Appalachian Sustainable Agriculture Project, 2006). www.asapconnections.org/research.html.

This report details the results of interviews with Child Nutrition Directors (CNDs) from Asheville City Schools and the Madison, Mitchell, Yancey, and Rutherford County School Districts. In the interviews, CNDs were asked to share insights about working with local farms and talk about their experiences in overcoming obstacles. The study also mailed CNDs in nineteen other school districts in Western North Carolina to find out what they think it would take to succeed with farm-to-school programming.

Kirby, L. “Hospital Foodservice in Western North Carolina: Implications for the Local Food System.” (Asheville, NC: Appalachian Sustainable Agriculture Project, 2006). www.asapconnections.org/special/research.html.

This paper describes the interest in and demand for local food within North Carolina hospital foodservice. Local food purchasing in hospitals helps to meet hospital goals of improving the health and wellness of patients, visitors, and staff while simultaneously strengthening regional agriculture.

Kirby, L. "Restaurants as a Potential Market Channel for Locally-Grown Food in Western North Carolina." (Asheville, NC: Appalachian Sustainable Agriculture Project, 2006). www.asapconnections.org/special/research.html.

This study examines the opportunities independently owned restaurants can offer emergent local food systems by providing small farms with a flexible, accessible entry point into a new marketing opportunity.

Kirby, L. "Results from a Western North Carolina Farm-to-College Survey." (Asheville, NC: Appalachian Sustainable Agriculture Project, 2006). www.asapconnections.org/research.html.

This report summarizes the findings of a survey to foodservice directors representing 15 to 17 colleges and universities in the 23-county region of Western North Carolina. Foodservice directors were interviewed by phone during the 2004-2005 and 2005-2006 academic years and asked questions about their food service programs, existing farm-to-college programs, and barriers and motivators related to starting a farm-to-college program.

Kirby, L. "Summer Camps as a Potential Market Channel for Locally-Grown Food in Western North Carolina." (Asheville, NC: Appalachian Sustainable Agriculture Project, 2006). www.asapconnections.org/special/research.html.

As a market opportunity for local farms, summer camp foodservice offers a natural fit in terms of camp season and farm growing season. However, barriers exist with regards to infrastructure deficiencies and issues with the logistics of placing orders and receiving deliveries.

Kirby, L. "The Value of Appalachian Grown Labeling for Nursery Growers in Western North Carolina." (Asheville, NC: Appalachian Sustainable Agriculture Project, 2006). www.asapconnections.org/special/research.html.

The data from this study suggests the need to differentiate locally grown nursery products as a way to strengthen demand for the products.

Kirby, L. "Local Food Purchasing by Highly Motivated Businesses and Consumers in Western North Carolina." (Asheville, NC: Appalachian Sustainable Agriculture Project, 2007). www.asapconnections.org/special/research.html.

The data presented in this paper confirms that there is a gap between the amount and/or type of local food that highly motivated consumers and businesses in Western North Carolina are interested in buying and the amount and/or type of local food they are actually buying. Significant barriers for organizational buyers may include difficulties associated with coordinating purchase and delivery, price, and the availability of locally grown foods. Better information about the influence of barriers and motivators on local food purchasing behavior is needed.

Kirby, L. "A Survey of North Carolina Cooperative Extension Agents in Western North Carolina." (Asheville, NC: Appalachian Sustainable Agriculture Project, 2007). www.asapconnections.org/special/research.html.

This survey of NCCE agents was a way for ASAP to collect some of that important but difficult to gather information. It was also an effort by ASAP to involve NCCE in the research process aimed at identifying ways to strengthen and sustain the region's farms, a top priority of both organizations. Survey results suggest that there is good potential for expanding local markets for local farm products in Western North Carolina. According to the Extension agents, the region's highly fertile land and long growing season coupled with a strong commitment to farming by the region's farmers suggest that – despite the need to address some significant barriers and challenges to local food production and distribution – the future of the local food system in WNC is promising.

Kirby, L., and J. Blair. "Exploring the Role of Latinos in the Western North Carolina Food System."
(Asheville, NC: Appalachian Sustainable Agriculture Project, 2007).
www.asapconnections.org/special/research.html.

This research was exploratory, with the goal of identifying and understanding issues important to how the Latino community intersects with the food and farm economy in Western North Carolina. Other than the large number of Latino-owned businesses, this research found no evidence that those establishments represent a strong potential market for local farm products.

Kirby, L., C. Jackson, et al. "Growing Local: Expanding the Western North Carolina Food and Farm Economy." (Asheville, NC: Appalachian Sustainable Agriculture Project, 2007). www.asapconnections.org/research.htm.

A report detailing the results of a multi-year research project on the food and farming economy of Western North Carolina. The study was funded by the Southern Sustainable Agriculture Research and Education program. The research examined what food and farm products are currently produced in the region; how much of what is produced is also consumed in the region; the potential for increasing local consumption of locally produced food as a means to strengthen the regional farm economy; and where investment of resources or other actions could eliminate barriers currently impeding the purchase of local food.

Kirby, L., and A. Perrett. "A Survey of Local Food Activities in the Southern Appalachian Region." (Asheville, NC: Appalachian Sustainable Agriculture Project, 2007). www.asapconnections.org/special/research.html.

A total of 22 organizations concerned with rebuilding their local food system were surveyed to identify barriers and opportunities related to rebuilding strong local food systems in the region. Strong demand was overwhelmingly the top category of asset named by survey participants regarding local food systems in the region. Beyond demand, many survey respondents named characteristics of the region's farmers as advantageous for local food systems. Finally, many survey respondents recognized the strong network of nonprofit and university-based organizations working on local food issues as a real strength for the region in terms of rebuilding local food systems.

Kline, Carol, Leah Joyner, and Christine Gurganus. "Identifying Gaps and Barriers along the NC Farm-Food Value Chain: Delphi Study." (Eastern Carolina University, Center for Sustainable Tourism, 2013).

The purposes of this study were to: (1) formulate a list of issues, gaps and barriers within the farm-food value chain in North Carolina; and (2) identify the issues, gaps, and barriers of greatest importance. Some of the issues spanned the value chain stages, as respondents from various stages cited them as critical. For example, the "buy local movement" and "creation of food hubs" received attention within many of the stages. Other critical issues were stage-specific, and still others encompassed the whole system. Service providers along the value chain can use the lists of emergent critical issues to consider areas where their resources could be focused.

Krane, Mari, Marcus Hill, Doris Paez, et al. "Forsyth County's Community Food System: A Foundation to Grow 2013." (Forsyth Futures, 2013).

In this food and farm assessment, researchers from Forsyth Futures looked at agricultural data, local food system infrastructure data (e.g., farmers markets, community gardens, food hubs), resident food spending, food access and food needs, and more in an eight-county area, and developed a set of recommendations for improving and expanding the resiliency of the local food system for the region.

Leone, Lucia A., Diane Beth, Scott B. Ickes, et al. "Attitudes Toward Fruit and Vegetable Consumption and Farmers Market Usage Among Low-Income North Carolinians." Journal of Hunger & Environmental Nutrition (August 2012): 37–41.

This article studies the attitudes, barriers, and facilitators towards eating and fruit and vegetable shopping at farmers markets among recipients of government assistance in

North Carolina. The research finds that the number one barrier to farmers market usage among study participants was that they were not able to use their EBT or WIC benefits. Participants also indicated that having more information about the location of farmers markets and convenient transportation would make access easier.

Lincoln County. “Lincoln Farmland Protection Plan.” (2012). http://nc-lincolncounty.civicplus.com/DocumentCenter/View/5607.

Plan includes strategies to support local food systems including research on marketing and recruiting a value-added processing center and slaughter/processing facility.

McCoy, Bill, and Linda Jacobs Shipley. “Community Needs Assessment: Change for Good Begins Here.” (Charlotte, NC: University of North Carolina-Charlotte, Urban Institute, 2011). http://ui.uncc.edu/sites/default/files/pdf/2011_UW_Needs_Assessment_Full_Report.pdf.

This community needs assessment – focused primarily on health and mental health, housing and poverty, and education – discusses food system needs pertaining to food assistance, food security, and food access.

Mettam, Laurie, Brandin King, and Rebecca Dunning. “A Community and Local Government Guide to Developing Local Food Systems in North Carolina.” (Raleigh, NC: The Center for Environmental Farming Systems, 2013). www.cefs.ncsu.edu/publications/guide-to-developing-local-food-systems-in-nc.pdf.

This guide serves as a resource to help community members create a more local food economy. The guide focuses on land use planning issues that arise as elected officials, town managers, Cooperative Extension agents, and community leaders work together to establish local food systems in their communities.

Mills, S. “Report on the Feasibility of a Small-Scale Small-Animal Slaughter Facility for Independent Meat Producers in North Carolina.” (Mars Hill, NC: 2007).

A report summarizing the results of a study conducted on the feasibility of establishing small-scale slaughter facilities in the state that would meet the needs of independent small animal meat producers. Researchers administered a survey to meat producers across the state to determine: the level of existing and potential demand for facilities; areas in the state with the greatest unmet demand; the demographic characteristics of potential users; and potential economic impact. With results showing that the western part of the state had the greatest unmet demand, further research was conducted regarding the feasibility of establishing a small-animal processing facility in Western North Carolina. Report prepared for the North Carolina Department of Agriculture and Consumer Services.

Mills, S., and C. Wold. "Developing Shared-use Food and Agricultural Facilities in North Carolina." (Mars Hill, NC: Center for Assessment and Research Alliances, Mars Hill College, 2007).
www.smithsonmills.com/research.htm.

A report summarizing the results of an analysis of the economic impact and potential of shared-use food and agricultural facilities in North Carolina including regional value-added food processing centers, shared-use community kitchens, and shared-use agricultural processing facilities. The study was funded by the North Carolina Rural Economic Development Center.

MKF Research, LLC. "Economic Impact of North Carolina Wine and Grapes 2005." (Helena, California: MKF Research, LLC, 2007).

Report commissioned by the North Carolina Department of Commerce, the North Carolina Division of Tourism, Film and Sports Development, and the North Carolina Wine and Grape Council detailing the economic impact of wine and grapes on the North Carolina economy. The report, which draws from primary research with wineries, suppliers, and growers and existing studies on the industry, provides a snapshot of the wine and grape industry (grape production, number of vineyards, wine tourism, employment, the economic value of wine, grape, and related industries) and describes challenges and opportunities for continued growth.

North Carolina Rural Economic Development Center. "North Carolina Agriculture Regional Perspectives." (Raleigh, NC: Agricultural Advancement Consortium, 2009).

Report summarizing research conducted on agriculture in different regions of North Carolina: Advantage West region, Charlotte, Piedmont Triangle, Research Triangle, Southeast, Eastern, and Northeast. Profiles of each region include a snapshot of current conditions, perspectives on the state of farming from producers and extension agents, and policy recommendations.

North Carolina Division of Public Health. "CTG Project NC Fruit and Vegetable Outlet Inventory." (Community Transformation Grant Project, 2012).
www.healthydurham.org/docs/FVOI 2012.pdf.

An inventory of outlets selling fruits and vegetables in North Carolina in 2012, broken down by Community Transformation Project Grant regions.

North Carolina Division of Public Health. "CTG Project NC Directory of Farmers Markets, Roadside Stands, and Produce Markets." (2013).

The 2013 NC Directory of Farmers Markets, Roadside Stands, and Produce Markets identifies where fresh produce is sold outside of retail stores in North Carolina. Information in the directory was compiled from a statewide inventory conducted by the North Carolina Division of Public Health (NC DPH) in partnership with local health department staff from the Community Transformation Grant Project and from the Healthy Communities Program. The purpose of the inventory is to identify where fresh fruits and vegetables are available across North Carolina. State and local partners are encouraged to use this directory to promote locations where fresh fruits and vegetables are available. In addition, this directory can be used to identify locations where fresh fruits and vegetables are not readily available outside of retail stores. These locations could serve as the focus of efforts to increase access to fresh fruits and vegetables.

Nowlin, Michelle, Shivaugn Rayl, and Roland McReynolds. "Growing your Local Food Business in North Carolina: A Guide to Laws and Regulations." (Carolina Farm Stewardship Association, 2012).
www.carolinafarmstewards.org/wp-content/uploads/2012/10/CFSA_RegGuide-NC2012_webres4.pdf.

This guide was created to provide a comprehensive introduction to the regulations in North Carolina that are relevant to farm and food businesses, with a particular focus on small-scale, direct-to-consumer sales, and specialty operations.

Perrett, A. "The Infrastructure of Food Procurement and Distribution: Implications for Farmers in Western North Carolina." (Asheville, NC: Appalachian Sustainable Agriculture Project, 2007). www.asapconnections.org/special/research.html.

This report examines the food industry in the United States and its implications for farmers in Western North Carolina who want to grow for and sell to local markets. Local patterns of distribution are presented as models and are based on current but not complete knowledge of existing systems with the potential to accommodate more local food with further development. Data on local systems are drawn from participant observation, from formal and informal interviews with local producers, processors, and wholesalers, and from local news outlets.

Racine, Elizabeth, Qingfang Wang, and Christina Wilson. "Mecklenburg County Community Food Assessment Phase 1, Summary of Findings." (2010).
http://ui.uncc.edu/story/mecklenburg-county-community-food-assessment-2010.

In 2010, a UNC Charlotte research team led by Dr. Elizabeth Racine conducted a Mecklenburg County Community Food Assessment for the Charlotte Mecklenburg Food Policy Council. The results of Phase 1 of this study looked at the presence or absence of food stores in Mecklenburg's Census Block Groups and the relationship of that availability to various health indicators. This study identifies multiple low-income areas that lack full-service grocery stores. Clustered largely along North Graham St. and West Blvd. in Charlotte, these food deserts' lack of access to healthy foods was linked to increased rates of premature deaths from heart disease.

Racine, Elizabeth, and Qingfang Wang. "Mecklenburg County Community Food Assessment Phase 2, Summary of Findings." (2010). http://ui.uncc.edu/story/mecklenburg-county-community-food-assessment-2010-phase-2; http://ui.uncc.edu/story/mecklenburg-food-assessment-phase-2-results.

Phase 2 of the research, focusing on the perception of food access among residents in these food deserts and an analysis of restaurants across all areas of Mecklenburg County. Overall, the study found that residents of food deserts typically travel by car to multiple grocery or food stores to take advantage of sale prices. Residents of these areas would also prefer to have access to affordable grocery stores nearer to home and they would like cooking classes to learn how to cook healthy, low cost, convenient meals. The restaurant analysis found that access to fast food restaurants does not vary by income or the percentage of black or white residents, but full-service restaurants are more common in higher income areas. Exposure to more restaurants, particularly fast food restaurants, was associated with premature death to heart disease and diabetes.

Rozier Rich, Samantha, and Stacy Tomas. "Agritourism in North Carolina Visitor and Farmer Survey, Education." (North Carolina State University Tourism Extension, 2011). www.ncsu.edu/tourismextension/programs/documents/Agritourism_NorthCarolina_overall_report.pdf.

This pilot project used a series of surveys to better understand visitors to agritourism farms in North Carolina during the agritourism season in 2010.

Smithson Mills, Inc. "An Assessment of the Market for Locally Produced Foods in the Charlotte Metropolitan Area." (Asheville, NC: Smithson Mills Inc., 2013).

This research paper catalogues the local food scene in the Greater Charlotte area.

Stanly County. "Stanly County Farmland Preservation Plan." (2009). www.lincolncounty.org/DocumentCenter/Home/View/2259.

Plan includes strategic recommendations that impact local food systems such as development of a countywide institutional food-buying program to support local food purchases.

Town of Davidson Board of Commissioners. “Davidson Comprehensive Plan.” (2010). http://nc-davidson2.civicplus.com/DocumentCenter/Home/View/1471.

Although references to food and farms are incorporated throughout, Goal 5 on Page 59 outlines “Promote the Production of, Access to, and Consumption of Local Foods.”

UNCA. “Sowing the Seeds: The Promise of Local Food Systems in Southeast Central North Carolina.” (Chapel Hill Department of City and Regional Planning, University of North Carolina at Chapel Hill, 2008). www.feastdowneast.org/Research/Sowing%20the%20Seeds%20The%20Promise%20of%20Local%20Food%20Systems%20in%20Southeastern%20North%20Carolina.pdf.

A report compiled by graduate students in the Department of City and Regional Planning at UNC Chapel Hill to examine the economic rationale for shifting to local food systems in the Southeast Central region of North Carolina (Bladen, Columbus, Hoke, and Robeson counties) and specifically the feasibility of developing institutional food purchasing programs that source from local farms in the study region.

Union County. “Union County Farmland Preservation Program.” (2008). http://union.ces.ncsu.edu/farmlandpreservationprogram/.
Ordinance: http://unioncountync.us/Portals/0/Ordinances/Volume4/Vol4_041-051.pdf.

The purpose of this program is to promote agricultural values and general welfare of Union County, and more specifically increase identity and pride in the agricultural community and its way of life, encourage the economic and financial health of agriculture, and increase protection from non-farm development and other negative impacts on properly managed farms.

Zehnder, G., E. DeFelice, et al. “Creating a Value Chain System for Local and Regional Farm Products.” (Clemson, SC: Clemson University, 2006).
www.sare.org.

This final report to the Southern Sustainable Agriculture Research and Education reports on the outcomes of a planning project to develop a committed network of individuals and organizations in the Carolinas who would look at strategies to increase access to existing market opportunities as well as create new ones for small-scale, family-owned farms. In 2003, the project organized a task force with representatives from key organizations in the Carolinas (1862 and 1890 Land Grant Universities in North and South Carolina, CFSA, ASAP, South Carolina Sustainable Universities Initiative, and North and South Carolina Departments of Agriculture Marketing Divisions) to oversee the investigation and development of strategies to increase and develop new market opportunities. The project also conducted a survey of farmers attending CFSA's 2003

Agriculture Conference to collect information on demographics, commonly used marketing strategies and ideas for improvement, and interest in participating in the development of a more coordinated production/marketing system.

SOUTH CAROLINA

Barron, Felix. “Food Industry Needs Assessment Survey: A Case Study.” Journal of Extension 47, no. 3 (2009).
www.joe.org/joe/2009june/rb6.php.

This study assessed the needs of the food processing industry in South Carolina. Results indicated that developing new products and markets, solving technical problems, and the training of employees were important needs.

Carpio, Carlos, David Hughes, and Olga Isengildina. “Comprehensive Assessment of the South Carolina Agribusiness Cluster.” Prepared for MarketSearch. (2008).
www.clemson.edu/public/ciecd/focus_areas/research/files/Complete%20Report%20MarketSearchJuly2909.pdf.

This report presents comprehensive descriptions and analysis of the state of the agribusiness sector in South Carolina.

Carpio, Carlos E., Olga Isengildina-Massa, David Hughes, and Charles Curtis. “Potential Economic Impact of the South Carolina Agricultural Marketing Campaign.” (Clemson University Applied Economics Department, 2007).
www.clemson.edu/centers-institutes/tourism/documents/WPpotentialimpacts.pdf.

The purpose of this study was to evaluate the potential impact of the South Carolina agricultural marketing and branding campaign previous to its launch on May 22, 2007.

Chester County Development Association. “Economic Development Strategic Plan Target Industry Analysis Marketing Plan.” (2008).
www.choosechester.com/pdf/strategic_plan.pdf.

Recommendations for the county contained in the plan include targeting value-added food products manufacturing.

Freedman, D.A. et al. “Addressing Readiness for Establishing a Farmers Market at a Community Health Center.” Journal of Community Health 37, no. 1 (2012): 80-88. DOI: 10.1007/s10900-011-9419-x.
www.ncbi.nlm.nih.gov/pubmed/21643822.

The goal of this study was to extend existing research on community readiness to identify indicators of preparedness among community health centers for establishing onsite farmers markets. The sampling frame included all community health centers in South Carolina. Researchers found five measurable indicators for community readiness: capacity, social capital, awareness of health problems and solutions, logistical factors, and sustainability.

Gerald Shannon, Sue-Ann. "South Carolina's Agribusiness Industry: Today and Tomorrow." Market Search Topline Report. (2009). www.palmettoinstitute.org/client_resources/sc%20agribusiness%20industry%20today%20and%20tomorrow.pdf.

This report summarizes a comprehensive study of South Carolina's agribusiness industry. The report covers asset mapping and an analysis of the current conditions, interviews with industry experts, and surveys of food and forestry producers. The report concludes that agribusiness is South Carolina's biggest driver for the state economy, and if resources were dedicated to an awareness campaign, training and technical assistance for producers, and marketing, the industry could continue to experience long term, sustainable growth.

Kunkel, Mary Elizabeth. "Evaluation of the South Carolina Senior Farmers Market Nutrition Education Program." Journal of the American Dietetic Association 103, no. 7 (2003):880-883.

The author's research found that the Senior Farmers Market Nutrition Program (SFMNP) is an effective method for increasing consumption of agricultural commodities from farmers markets by low-income seniors and is worthy of continued funding.

Meter, Ken, and Megan Phillips Goldenberg. "Making Small Farms into Big Business: A Plan for Infrastructure Investments to Connect Small Farms in South Carolina to Local Markets." (Crossroads Resource Center, prepared for the State of South Carolina, 2013). www.crcworks.org/scfood.pdf.

The primary focus of this document is to recommend investments that will foster the production, processing, and sale of locally produced fruits and vegetables in South Carolina markets.

Nowlin, Michelle, Shivaugn Rayl, and Roland McReynolds. "Growing your Local Food Business in South Carolina: A Guide to Laws and Regulations." (Carolina Farm Stewardship Association, 2012). www.carolinafarmstewards.org/wp-content/uploads/2012/10/CFSA_RegGuide-SC2012_08-webres2.pdf.

This guide was created to provide a comprehensive introduction to the regulations in South Carolina that are relevant to farm and food businesses, with a particular focus on small-scale, direct-to-consumer sales, and specialty operations.

Smithson Mills, Inc., Taylor Sisk, Tony Kleese, Roland McReynolds, and Dana Trentlage. "Organic Produce Marketing Survey." (Carolina Farm Stewardship Association, 2013). www.carolinafarmstewards.org/wp-content/uploads/2013/03/OPMS_20132.pdf.

This report gives the results of an extensive survey of wholesalers, retailers, and value-added processors in the Carolinas that asked about demand for local organic product. The study found a $7 million gap between supply and demand for key organic crops.

Willis, D.B., C.E. Carpio, K. Boys, and E.D. Young. "Consumer Willingness to Pay for Locally Grown Produce Designed to Support Local Food Banks and Enhance Locally Grown Producer Markets." (2013). http://ageconsearch.umn.edu/bitstream/150288/2/Willis et al. AAEA 2013.pdf.

This study investigates the possibility of using local food banks as a distributor in the local food supply chain. The specific research objective was to estimate the price premium consumers are willing to pay at retail outlets for locally grown products, if consumers have knowledge that a portion of the purchase price will be used as a donation to support local food banks.

FEDERAL

Hanson, Kenneth. "The Food Assistance National Input-Output Multiplier (FANIOM) Model and the Stimulus Effects of SNAP." (2010). www.ers.usda.gov/media/134245/err103_reportsummary_1_.pdf.

An increase in SNAP benefits provides a fiscal stimulus to the economy during an economic downturn. When resources are underemployed, the increase in SNAP benefits starts a multiplier process in which inter-industry transactions and induced consumption effects lead to an economic impact that is greater than the initial stimulus. An input-output multiplier (IOM) model, such as FANIOM, tracks and measures this multiplier process.

APPENDIX B: LOCAL FOOD SYSTEM DEVELOPMENT IN REGION

This section summarizes and analyzes recommendations of food and farm assessments, local food system programs, and action plans that have been conducted in the project region. The information summarized in this section is drawn from an inventory of local food and farm assessments, action plans, feasibility studies, case studies, and other scholarly research conducted in North and South Carolina between 2000 and 2013, found in Appendix A of this report. The majority of the papers discussed were obtained through general web searches, though a few unpublished items were sent via email from the original authors directly to the research team. The inventory was compiled by researchers from ASAP, CEFS, and CFSA. This section provides an overview of the key recommendations given in these assessment reports and provides guidance on how each of these recommendations can be incorporated into the CONNECT Our Future project's sustainable regional development plan.

SECTOR ANALYSIS

Food and farm assessments provide a way for local government agencies, planning and development entities, agricultural research and extension offices, health and human service departments, and local food and farm advocacy groups to quantify and qualify existing food and farm needs in their communities. Through the assessment process, community stakeholders strive to identify points of intervention where targeted application of resources can strengthen the local food system and support local farms. As local food systems are comprised of many parts – production, processing, transportation, marketing, retail sales, food service, meal preparation, waste disposal, etc. – recommendations around the most effective interventions to improve local food systems are similarly varied. These recommendations can, however, be loosely grouped according to the community service sectors that maintain the bulk of the resources – both in personnel, training, tools, and infrastructure – to take the lead on specific food system localization activities. These sectors include:

> Agriculture sector: Including Cooperative Extension, farmers markets, Farm Bureau, nonprofit farm assistance groups (CFSA, CEFS, The LandTrust for Central NC, etc.), farmers, etc.

Food retail business sector: Including area restaurants, grocers, distributors, institutions, schools, universities, chambers of commerce, etc.

Public outreach, communications, and education sector: Including food policy councils, convention and visitors bureaus, local food and farm advocacy groups (Slow Food chapters, 4-H, Food Corps, etc.), youth development centers, school boards, after-school programs, etc.

Regulation, policy, and built capacity sector: Including local government agencies, planning and development boards, development firms, food policy councils, chambers of commerce, etc.

Health and human services sector: Including the Department of Health and Human Services, the Division of Social Services, food assistance networks, food banks, etc.

Each of these community sectors is equipped with a unique set of community capitals that allows it to leverage resources to accomplish specific goals. It is by utilizing these existing routes that communities can be most successful in efficiently conducting localization projects and achieving desired local food system goals.

The following sections provide food system localization recommendations grouped according to the community sector(s) that would be most integral to project achievement. Though the recommendations are segregated, it is important to remember that the food system is a *system,* and even though some community sectors may be able to provide increased levels of assistance for particular localization activities, all sectors must continually work together, as any action in one part of the system necessarily affects and influences all other parts of that system. This interconnectedness is apparent in the overview of recommendations as some of the suggested actions involve multiple sectors. These overlaps will be addressed individually for each sector, as the specific actions taken by the sectors for overlapping recommendations vary.

KEY RECOMMENDATIONS

AGRICULTURAL SECTOR

SECURE FARMLAND AND GROW NEW AND TRANSITIONING FARMERS

Based on a combination of issues such as the advancing age of farmers, high development pressure, and unmet demand for local food and farm products, there is a need for programs and policies to help maintain working farmland in the project region. This can be accomplished through initiatives such as farmer transition programs, farmland preservation activities, and other strategies affecting land use. According to USDA, the average age of farmers has been increasing every year since 1978. The average age of all U.S. farm operators has been greater than 50 years of age since at least the 1974 census, and the national average in 2007 was 57.1 years of age. The question of who will continue to farm is a pressing issue for the project region. Due to high land prices, beginning and young farmers are often unable to access affordable land to farm. At the same time, there is increasing interest by retiring farmers and non-farming landowners in finding farmers to work their land. This situation provides promising opportunities for linking farmers with land and sustaining farming in the area.

Strategies for securing farmland include but are not limited to:

> <u>Include farmland conservation in the community comprehensive plan</u> - A comprehensive plan to conserve farmland should: provide a clear description of the agricultural characteristics and trends of the region; provide clear goals and objectives for farmland conservation efforts; anticipate the needs of local producers, consumers, and markets concerning agriculture, and discuss options for supporting these sectors; take into consideration the environmental implications of farming in the region and support sustainable practices; promote the retention and addition of farm operators; support urban agriculture where applicable; and be flexible enough to allow for new opportunities when they arise such as a specific application to support agritourism.
>
> <u>Consider zoning</u> - Zoning is inexpensive to implement but can keep land affordable for farming purposes.
>
> <u>Purchase of Agricultural Conservation Easements (PACE) or similar project</u> - Local governments can set up agricultural preservation boards to participate in the purchase of agricultural conservation easements. While the landowner retains ownership of the land,

the deed permanently prevents the land from being developed for non-agricultural purposes.

As for the cultivation of new and transitioning farmers, apprenticeships can provide hands-on opportunities for new farmers to learn the inner workings of farm management from experienced farmers. Trainings and resources can also provide information on financial record keeping, food safety regulation compliance, market planning, branding, farm management, and sustainable production techniques. Like experienced farmers, new farmers will be attracted to the area if they think that they will be able to succeed and flourish.

PROVIDE TRAINING AND TECHNICAL ASSISTANCE TO FARMERS ABOUT FOOD SAFETY CERTIFICATIONS

Farmers are facing new trends as consumer concern about food safety grows and the Food Safety Modernization Act takes shape. Producers must learn to navigate the requirements asked of them to enter new markets, including requirements for liability insurance and safety certifications (e.g., GAPs or HACCP). Unlike federal or state regulations, these safety certifications are based on sets of recommendations from industry regulators and delineate practices which, if followed, ensure that farms are in compliance. Acquiring safety certifications can be costly and time consuming, and producers need training and guidance to know what certifications they should pursue, and what is involved for each type of certification process.

PROVIDE TRAINING AND TECHNICAL ASSISTANCE TO FARMERS ABOUT BUSINESS AND MARKET PLANNING

To access the opportunities in local markets successfully, farmers need a combination of skills, resources, and support in multiple areas. Farmers need training and expertise in business and market planning to effectively diversify their farm businesses and market their farm products locally. Farmers need to understand industry standards for different types of local market outlets: packaging, labeling, food safety requirements, distribution, quality standards, trace-back standards, etc. Furthermore, farmers need assistance determining what types of market outlets are a good match for the capacity of their farm. For retail and institutional outlets in particular, farmers need assistance developing relationships with buyers and information specific to market requirements and desires. This combination of assistance provides farmers with the support needed to make decisions and implement practices based on careful planning. Decisions based in planning reduce risk and increase the likelihood that strategies are successful, and successful farmers attract new farmers into the market outlets.

It should be noted that while farmers can benefit from trainings on meeting the market quality standards, buyers also benefit from information and trainings on the qualities and benefits of products grown for local markets.

PROVIDE TRAINING AND TECHNICAL ASSISTANCE TO FARMERS ABOUT SEASON EXTENSION TECHNIQUES

From a production standpoint, there are ways for farmers to extend their production season and offer customers local products year round. High tunnels, hydroponic operations, and greenhouses provide a warmer production environment during the late fall and early spring seasons, allowing producers to grow cold-hardy products like greens longer into the season. Preservation techniques, including freezing, canning, fermentation, or drying, give local products longer shelf lives. Similarly, value-added products like jams, pasta sauces, and salsas are products that can be offered year round. Beyond produce, animal proteins like ground beef, jerky, and cheese can be produced and promoted year round. Connecting farmers to training and technical assistance around these methods of season extension and value added production provides opportunities for the expansion of the region’s local food offerings.

ASSIST FARMERS IN ACCESSING CREDIT AND FINANCIAL OPPORTUNITIES

It costs money to start a business, and a farm business is no different. Farmland, equipment, labor, and marketing are all cost-intensive. When it comes to seeking financial support, options for farmers are often limited. Grants are few, generally a long shot, and highly competitive. When they are available, they are most often targeted at existing farms’ new projects. Loans are the most likely way to finance a farm or a farm expansion. In order to gain access to capital, farmers must learn to write solid business plans that will show potential lenders that their business can provide a return on investment. Entities like Carolina Farm Credit work to help farmers develop a sound portfolio and to access the credit opportunities they need.

PROMOTE AND SUPPORT CONNECTIONS BETWEEN FARMS AND RESTAURANTS, INSTITUTIONS, BUSINESSES, AND OTHER ORGANIZATIONS

The structure of the current global food system often leaves procurement specialists disengaged from the local farming community, and these buyers require assistance and resources to connect with qualified local growers. These connections form the basis of a productive and sustainable relationship between grower and buyer. Some type of connection assistance should be considered as a means of facilitating lasting grower-buyer relationships in order to fulfill demand for local food.

Strategies for connecting growers and buyers include wholesale farmer-buyer product directories, events that invite growers and buyers to meet one another in a pressure-free environment, and farm field trips. Local agencies and organizations that understand local production should be encouraged to facilitate the matching of suitable farmers with appropriate markets.

CONDUCT LOCAL FOOD BRANDING AND CERTIFICATION PROGRAMS

Local branding is a way to add value to local farm products and provide farmers with a means to increase their marketing power. Regional branding and certification programs are used to identify products from local farms in non-direct local markets and to protect the integrity of the local market for a region's farms. With regional branding, locally grown products are tied directly to their region of origin, providing farmers with a means to increase their marketing power and access consumers' desire to support local farms and the local economy.

FOOD RETAIL BUSINESS SECTOR

CONDUCT LOCAL FOOD BRANDING AND CERTIFICATION PROGRAMS

According to the market research firm the Hartman Group, "local" is one of the food attributes most highly valued by consumers nationwide and is a major trend affecting the food industry. Local food has become such a staple for American consumers over the past few years that, according to a study conducted by consulting firm AT Kearney, almost 30 percent of grocery shoppers say they would consider purchasing food elsewhere if their preferred store did not carry local foods. For food retailers, tapping into consumer demand for local food requires clear and transparent labeling of such products in the marketplace, as demand for local products can only be fulfilled if consumers can easily find and identify them.

When it comes to local food branding, consumers require specific pieces of information in order to believe that a product is truly local. ASAP's research shows that local labeling that identifies the location of a farm, the farm name, and a picture or story about the farm or farmer who grew a product are the most trustworthy types of local messaging. State marketing programs – such as Georgia's "Georgia Grown" or North Carolina's "Gotta Be NC" – rank lower, presumably because people's personal definitions of local do not tend to be statewide. Local food branding campaigns that can verify the authenticity of local products to consumers provide an authoritative way for consumers to identify the local agricultural products they desire in the marketplace.

PROMOTE AND SUPPORT CONNECTIONS BETWEEN FARMS AND RESTAURANTS, INSTITUTIONS, BUSINESSES, AND OTHER ORGANIZATIONS

Within the context of a developing local food system, farmers need help developing business relationships with local buyers and vice versa. As a market choice, restaurants are a good option for farms that do not produce enough quantity to meet large-scale markets, but produce unique products desirable to independent restaurants. From the dining perspective, when restaurant patrons learn that the food on their plates comes from a nearby place – a farm and a farmer with a name and a face – it gives the meal and the visit more meaning.

There are also opportunities to connect institutions, schools, hospitals, and colleges, to local food and provide fresh, local options to students, staff, patients, and employees. Institutional market settings like schools and hospitals provide opportunities to highlight the connections between food, food access, and health; nurture healthy eating habits in kids and families; and over the long term build support and appreciation for local farms and food. Moreover, schools and hospitals, because they reach broad constituencies and reach across socioeconomic and other cultural lines, provide opportunities to increase the distribution of fresh, local food to vulnerable children and families. Public schools in particular provide farms in rural settings with market options.

PUBLIC OUTREACH, COMMUNICATIONS, AND EDUCATION SECTOR

PROMOTE AND SUPPORT CONNECTIONS BETWEEN FARMS AND RESTAURANTS, INSTITUTIONS, BUSINESSES, AND OTHER ORGANIZATIONS

Dedicating time and resources to cultivate deeper connections between local farms and restaurants will engage participants positively with local food and local agriculture. A local food guide is one way to promote the connections between farms and local businesses, validate local agriculture, and give consumers a way to act on their desire to support local farms and buy local. Similarly, a program that highlights seasonally available local products at participating food businesses can provide a way to promote businesses already supporting local farms and a means for businesses interested in sourcing local an easy way to begin.

CONDUCT PLACE-BASED AGRICULTURAL MARKETING

The marketing of agricultural products based on the place where they were produced places value on an agricultural product because of where it was produced, and puts value on that place itself. This idea is relatively new in the United States, although well established in some European countries. Several initiatives around the country, often led by stakeholder groups of both agricultural producers and tourism professionals, connect a region's agricultural products with regional identity to differing degrees. All rely on a distinguishing label to mark agricultural products from a specified region and also on outreach or promotional campaigns to develop the connection between those products and their origins.

PROMOTE AND SUPPORT DIRECT-TO-CONSUMER OUTLETS

Direct-to-consumer outlets – including farmers markets, roadside stands and CSAs – are supported by an expanding base of repeat customers who purchase products directly from farmers not just to acquire food, but for the experience of interacting directly with the people that grow their food and for a sense of community. With increased interest by consumers in supporting local farms and buying local food, it is vital that consumers know where to find local food through advertising, promotions, and labeling.

INCREASE CONSUMER EDUCATION AND OUTREACH

Strong demand for locally grown food and farm products confirms that the efforts of organizations like ASAP, CEFS, CFSA, and others to build public awareness and support for local food in North Carolina and South Carolina are working, and those efforts need to continue. In particular, media messages, promotional efforts, and general public education and outreach should be continued. It may be appropriate to add new messages to public education campaigns to counter identified barriers. Examples include information about how to eat a more seasonal diet or how to recognize local food in the marketplace. Consumers could also be encouraged to make preferences for processed local farm products as processing infrastructure becomes more available to producers in the project region. In responding to price as a substantial barrier in consumer markets, it may be useful to expand consumer education on more general topics such as how the food system works and how that system influences food prices and farmer incomes.

PROMOTE FARM TO SCHOOL PROGRAMMING AND ENGAGE YOUTH

Farm to School programming can have positive impacts on children's health and education as children learn about the food system by planting school gardens, participating in local food cooking classes and demonstrations, going on farm field trips, eating local food in their cafeterias, and by learning about the world around them through the lens of local food. These experiences nurture an appreciation for local agriculture and positively impact children's perceptions of and attitudes toward food and farming. By developing a "community up" approach that engages a wide array of community stakeholders – farmers, chefs, teachers, parents, school staff, churches, food banks, cooperative extension, and others – all members of the community can be actively engaged in the education of children about the local food system.

PROMOTE POSITIVE EXPERIENCES AROUND LOCAL FOOD

Farm tours, food and farm festivals, meet-the-farmer events, food tastings, and Farm to School and Farm to Hospital programs provide community members with the means to engage with local farms in meaningful ways, cultivating an appreciation for this natural resource. Furthermore, research from the health sciences demonstrates that food habits and preferences are directly impacted by positive and negative experiences. Preferences for food develop in positive contexts and aversions to foods develop in negative contexts. Following, children and adults that have positive experiences with local farms and food develop an appreciation for local food and farms, and are more likely to become active participants in the food system.

FOSTER COLLABORATION AROUND SHARED GOALS

New partnerships need to be formed, relationships expanded, and roles clarified in order to further food system localization efforts in the project region. The agenda of the local food movement is broad and far more than any one organization can handle effectively. There are many groups with which partnerships are critical for advancing the local food agenda, including farm worker support agencies, organizations concerned with hunger, health, and food security, financial and capital management entities, and governmental organizations that can facilitate policy changes influencing the ability of local farm products to reach local markets. As a first step, these groups can engage in an asset mapping and community visioning process. Asset mapping identifies the resources and stakeholders in the community relevant to the process of rebuilding community based food systems. Community visioning engages key stakeholders in a process that defines community strengths, needs, shared priorities, and most importantly begins to build relationships across community sectors and potential future collaborations. Combined, these strategies of engagement encourage community participation and buy-in, and in establishing common goals, allow stakeholders to invest more fully in effective actions that complement the actions of other stakeholders.

REGULATION, POLICY, AND BUILT CAPACITY SECTOR

COORDINATE FOOD SYSTEM POLICIES AND REGULATIONS[132]

Every community and farming operation is unique and will present different opportunities for local government to create a supportive atmosphere for farming. Planning regulations can be modified to allow farm businesses to adapt, innovate, and grow. An important first step is to review regulations already in place that may be hindering the production or sale of locally produced farm products.

Decision-makers at both the state and local levels can further pursue changes in policies affecting farms and farmers in a region through innovative agricultural policymaking. Policy advocacy is important as it relates to expanding the reach of local products into all parts of the community. Sample policies that have been endorsed or implemented in the North Carolina and South Carolina include:

> Food Policy Councils - A food policy council should serve as a way for people and organizations concerned about food access, food production, and food processing to interact and advocate for change.[133]
>
> Voluntary Agricultural Districts (VADS) - A specialized area where bona fide agricultural production is encouraged. Districts may require minimum acreages and enrollment periods for inclusion as a district. In general, districts are established to reduce conflicts between rural and urban landowners.
>
> Present Use Value (PUV) - The value of land based on its current use as agricultural land and assuming that there is no possibility of the land being used for another purpose.
>
> Extraterritorial Jurisdiction (ETJ) - Allows a municipality to ensure that developments within a designated planning region are compatible with zoning standards inside the city.

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[132] Unless otherwise footnoted, this list is adapted from "Planning for an Agricultural Future: A Guide for North Carolina Farmers and Local Governments," American Farmland Trust (2007).
[133] Casey Dillon, "Counties and Local Food Systems: Ensuring Healthy Foods, Nurturing Healthy Children," National Association of Counties (July 2007), http://www.farmtoschool.org/files/publications_133.pdf.

Including farming as an allowed use in a zoning district can provide the flexibility needed to change a farming operation in the future.

Comprehensive Farmland Preservation Plan - Comprehensive farmland preservation plans identify agricultural resources and outline efforts and funding opportunities to ensure that farming has a continued place in the community. Land preservation efforts strive to preserve strategically located parcels utilizing local funding to leverage available funding from the county and state.

Purchase of Agricultural Conservation Easement (PACE) - Landowners sell agricultural conservation easements to a government agency or private conservation organization. In exchange, farmland is permanently maintained for farming purposes and protected from development.

CONDUCT ADDITIONAL RESEARCH ON INFRASTRUCTURE DEVELOPMENT

As the local food system continues to mature in the project region, producers, processors, agricultural professionals, food and farm organizers, and others will have to address gaps in infrastructure that contribute to gaps between supply and demand and create barriers to further localization efforts. Building small and large animal processing facilities, food aggregation facilities, and alternative food distribution networks have become go-to methods for addressing infrastructure issues. However, the failure rate of these types of enterprises is high. Regulatory issues, siting difficulties, safety standards, overhead expenditures, sourcing issues, and extraordinary capital requirements hinder many of these businesses from opening, and high operating costs that outstrip revenue plague groups that are able to open facilities. The building of any kind of facility is a large undertaking and is often not the best first option. Research into infrastructure gaps should be designed to determine the most economically viable means to expand the region's local food system infrastructure capacity, which might take multiple forms: the development of new infrastructure, the expansion of existing infrastructure, or the conclusion that it is not currently economically viable to take on a physical infrastructure building project.

SUPPORT THE GROWTH OF SMALL FOOD BUSINESSES AND ENTREPRENEURSHIP

The expanding markets for local products and the increasing numbers of local producers in the project region are encouraging trends to budding entrepreneurs. Local officials can support the entrepreneurial spirit that exists in the region without having to take on the responsibility for the success of individual businesses. For example, shared-use kitchen facilities provide food entrepreneurs with a relatively inexpensive way to license food processing activities. However, setting up a commercial kitchen that meets specific federal and state health regulations can be expensive. Helping to raise capital for these types of ventures creates opportunities to expand local food sales through direct and indirect markets. Other means of supporting small food businesses and entrepreneurship include supporting farmers markets with the use of existing staff and existing physical facilities like parks and pavilions; adopting a local food sourcing policy; and including agricultural entrepreneurship guidelines in the town's comprehensive plan.

ADDRESS FOOD ACCESS AND PUBLIC HEALTH DISPARITIES

Policy plays an important role in supporting food access and health in any community. Initiatives to support community gardens, incentives to stores to increase healthy food options, and the establishment of food policy councils to give community members a way to voice their ideas on improving food access are all ways for local government to get involved. For example, to increase fresh food access, local government can help by subsidizing the initial costs of establishing Electronic Benefit Transfer (EBT) terminals at local farmers markets so that they can accept Supplemental Nutrition Assistance Program (SNAP) benefits. Local government can also ease the burden of creating and maintaining community gardens by offering property tax exemptions to established plots. State governments can develop minimum nutrition standards for food available in retail environments to reduce access to unhealthy foods and promote healthy foods. Government bodies have a unique opportunity to influence community health and food access through policy development, and for that reason, policy makers should be especially cautious and thorough in their research before implementing any changes to avoid the potential for unintended consequences.

HEALTH AND HUMAN SERVICES SECTOR

ADDRESS FOOD ACCESS AND PUBLIC HEALTH DISPARITIES

Improving low-income individuals' and families' access to fresh and healthy foods can lead to a positive shift in dietary patterns and contribute to an overall improvement in health and well-being. Farmers markets can be a valuable resource for low-income communities and can help address access to fresh, healthy foods. While bridging the divide between low-income communities and farmers markets can be challenging, it can be done by creating the right mix of welcoming market infrastructure and technological capabilities (e.g., ability to accept EBT/debit/credit payments), raising awareness of the market through outreach efforts, increasing awareness of nutritional benefit and incentive programs, and providing opportunities for patrons to develop cooking skills and learn valuable nutrition information.

APPENDIX C: COUNTY SNAPSHOTS

See following pages for County Snapshots.

SNAPSHOT OF LOCAL FOOD SYSTEM IN ANSON COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 76% Large family farms ($250k-$499k) 4% Very large family farms ($500k+) 16% Non-family farms 4%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	4.7%	7.3%
Number of farms	487 (1% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	2.9%	7%
Change in farmland acres 2002-2007	-10%	-7%
Proportion of farms reporting positive net income	50%	43%
Proportion of farms with direct sales	<1%	7%
Retail Infrastructure	**County**	**North Carolina**
Grocery stores/1,000 pop	0.22	0.19
Full-service restaurants/1,000 pop	0.48	0.75
SNAP-authorized stores	40(<1% of SNAP-auth. stores in NC)	8,805
Farmers markets	2 (<1% of NC farmers markets)	230
Consumption, Access, and Health	**County**	**North Carolina**
Proportion of population with inadequate fruit and vegetable consumption	87.5%	78.4%
Rates of diabetes and obesity	Diabetes (12.3%); Obesity (35.5%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	80%	56%
Waste Management*	**County**	**North Carolina**
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 1,856 (0.3% of NC total) ICI: 1,569 (0.3% of NC total) MSW: 3,065 (0.3% of NC total)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	**Charlotte-Gastonia-Rock Hill****	**North Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Anson County residents accounted for 0.3% of North Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN CABARRUS COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 95% Large family farms ($250k-$499k) 1% Very large family farms ($500k+) 3% Non-family farms 2%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	3.4%	7.3%
Number of farms	611 (1% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	5.6%	7%
Change in farmland acres 2002-2007	-9%	-7%
Proportion of farms reporting positive net income	31%	43%
Proportion of farms with direct sales	6%	7%
Retail Infrastructure	**County**	**North Carolina**
Grocery stores/1,000 pop	0.16	0.19
Full-service restaurants/1,000 pop	0.72	0.75
SNAP-authorized stores	145 (2% of SNAP-auth. stores in NC)	8,499
Farmers markets	4 (2% of NC farmers markets)	230
Consumption, Access, and Health	**County**	**North Carolina**
Proportion of population with inadequate fruit and vegetable consumption	80.2%	78.4%
Rates of diabetes and obesity	Diabetes (9.4%); Obesity (30.7%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	43%	56%
Waste Management *	**County**	**North Carolina**
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 12,654 (1.8% of NC) ICI: 10,699 (1.8% of NC) MSW: 20,903 (1.8% of NC)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	**Charlotte-Gastonia-Rock Hill****	**North Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Cabarrus County residents accounted for 1.9% of North Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN CHESTER COUNTY (SC)

Production	County	South Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 95% Large family farms ($250k-$499k) 1% Very large family farms ($500k+) 2% Non-family farms 3%	Small family farms (<$250k) 92% Large family farms ($250k-$499k) 1% Very large family farms ($500k+) 3% Non-family farms 3%
Proportion of farmers younger than 35	2.9%	6.8%
Number of farms	544 (2% of SC farms)	25,867
Proportion of farms growing fruit & vegetables	5.9%	4%
Change in farmland acres 2002-2007	+15%	+1%
Proportion of farms reporting positive net income	31%	35%
Proportion of farms with direct sales	4%	5%
Retail Infrastructure	**County**	**South Carolina**
Grocery stores/1,000 pop	0.30	0.19
Full-service restaurants/1,000 pop	0.52	0.77
SNAP-authorized stores	50 (1% of SNAP-auth. stores in SC)	5,146
Farmers Markets	2 (2% of SC farmers markets)	121
Consumption, Access, and Health	**County**	**South Carolina**
Proportion of population with inadequate fruit and vegetable consumption	81%	80.9%
Rates of diabetes and obesity	Diabetes (11.3%); Obesity (31.8%)	Diabetes (10.5%); Obesity (31.5%)
Proportion of children eligible for free/reduced-price lunch	66.8%	54.5%
Waste Management *	**County**	**South Carolina**
Tons of food waste recycled	45,144 (16% of SC total)	291,737
Equity	**Charlotte-Gastonia-Rock Hill****	**South Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($19,840); animal slaughter and processing ($23,620); food prep/service ($19,610)

*In 2012, Chester County residents accounted for 0.7% of South Carolina’s population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN CLEVELAND COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 92% Large family farms ($250k-$499k) 1% Very large family farms ($500k+) 3% Non-family farms 3%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	3.1%	7.3%
Number of farms	1,188 (2% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	5.1%	7%
Change in farmland acres 2002-2007	-1%	-7%
Proportion of farms reporting positive net income	37%	43%
Proportion of farms with direct sales	5%	7%
Retail Infrastructure	County	North Carolina
Grocery stores/1,000 pop	0.21	0.19
Full-service restaurants/1,000 pop	0.60	0.75
SNAP-authorized stores	120 (1% of SNAP-auth. stores in NC)	8,499
Farmers markets	2 (<1% of NC farmers markets)	230
Consumption, Access, and Health	County	North Carolina
Proportion of population with inadequate fruit and vegetable consumption	80.2%	78.4%
Rates of diabetes and obesity	Diabetes (11.6%); Obesity (32.5%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	65%	56%
Waste Management *	County	North Carolina
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 6,798 (1% of NC total) ICI: 5,748 (1% of NC total) MSW: 11,230 (1% of NC total)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	Charlotte-Gastonia-Rock Hill**	North Carolina
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Cleveland County residents accounted for 1% of North Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN GASTON COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 96% Large family farms ($250k-$499k) <1% Very large family farms ($500k+) 1% Non-family farms 2%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	4.3%	7.3%
Number of farms	516 (1% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	7%	7%
Change in farmland acres 2002-2007	-10%	-7%
Proportion of farms reporting positive net income	29%	43%
Proportion of farms with direct sales	9%	7%
Retail Infrastructure	**County**	**North Carolina**
Grocery stores/1,000 pop	0.16	0.19
Full-service restaurants/1,000 pop	0.57	0.75
SNAP-authorized stores	235 (3% of SNAP-auth. stores in NC)	8,499
Farmers markets	4 (2% of NC farmers markets)	230
Consumption, Access, and Health	**County**	**North Carolina**
Proportion of population with inadequate fruit and vegetable consumption	81.8%	78.4%
Rates of diabetes and obesity	Diabetes (9%); Obesity (26.2%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	60%	56%
Waste Management *	**County**	**North Carolina**
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 14,437 (2.1% of NC) ICI: 12,207 (2.1% of NC) MSW: 23,848 (2.1% of NC)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	**Charlotte-Gastonia-Rock Hill****	**North Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Gaston County residents accounted for 2.1% of North Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN IREDELL COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 88% Large family farms ($250k-$499k) 6% Very large family farms ($500k+) 4% Non-family farms 2%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	3.2%	7.3%
Number of farms	1,201 (2% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	5.2%	7%
Change in farmland acres 2002-2007	-6%	-7%
Proportion of farms reporting positive net income	43%	43%
Proportion of farms with direct sales	6%	7%
Retail Infrastructure	**County**	**North Carolina**
Grocery stores/1,000 pop	0.19	0.19
Full-service restaurants/1,000 pop	0.87	0.75
SNAP-authorized stores	132 (2% of SNAP-auth. stores in NC)	8,499
Farmers markets	3 (1% of NC farmers markets)	230
Consumption, Access, and Health	**County**	**North Carolina**
Proportion of population with inadequate fruit and vegetable consumption	76.9%	78.4%
Rates of diabetes and obesity	Diabetes (8.1%); Obesity (28.2%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	44%	56%
Waste Management *	**County**	**North Carolina**
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 11,241 (1.7% of NC) ICI: 9,504 (1.7% of NC) MSW: 18,569 (1.7% of NC)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	**Charlotte-Gastonia-Rock Hill****	**North Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Iredell County residents accounted for 1.7% of North Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN LANCASTER COUNTY (SC)

Production	County	South Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 93% Large family farms ($250k-$499k) <1% Very large family farms ($500k+) 4% Non-family farms 2%	Small family farms (<$250k) 92% Large family farms ($250k-$499k) 1% Very large family farms ($500k+) 3% Non-family farms 3%
Proportion of farmers younger than 35	3.0%	6.8%
Number of farms	573 (2.2% of SC farms)	25,867
Proportion of farms growing fruit & vegetables	4.7%	4%
Change in farmland acres 2002-2007	-20%	+1%
Proportion of farms reporting positive net income	38%	35%
Proportion of farms with direct sales	2%	5%
Retail Infrastructure	**County**	**South Carolina**
Grocery stores/1,000 pop	0.29	0.19
Full-service restaurants/1,000 pop	0.40	0.77
SNAP-authorized stores	96 (2% of SNAP-auth. stores in SC)	5,146
Farmers markets	1 (1% of SC farmers markets)	121
Consumption, Access, and Health	**County**	**South Carolina**
Proportion of population with inadequate fruit and vegetable consumption	85.7%	80.9%
Rates of diabetes and obesity	Diabetes (11%); Obesity (32.5%)	Diabetes (10.5%); Obesity (31.5%)
Proportion of children eligible for free/reduced-price lunch	55%	54.5%
Waste Management *	**County**	**South Carolina**
Tons of food waste recycled	5,025 (2% of SC total)	291,737
Equity	**Charlotte-Gastonia-Rock Hill****	**South Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($19,840); animal slaughter and processing ($23,620); food prep/service ($19,610)

*In 2012, Lancaster County residents accounted for 1.7% of South Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN LINCOLN COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 96% Large family farms ($250k-$499k) 1% Very large family farms ($500k+) 2% Non-family farms 1%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	2.5%	7.3%
Number of farms	638 (1% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	7.1%	7%
Change in farmland acres 2002-2007	+3%	-7%
Proportion of farms reporting positive net income	34%	43%
Proportion of farms with direct sales	7%	7%
Retail Infrastructure	**County**	**North Carolina**
Grocery stores/1,000 pop	0.19	0.19
Full-service restaurants/1,000 pop	0.58	0.75
SNAP-authorized stores	80 (1% of SNAP-auth. stores in NC)	8,499
Farmers markets	3 (1% of NC farmers markets)	230
Consumption, Access, and Health	**County**	**North Carolina**
Proportion of population with inadequate fruit and vegetable consumption	74.7%	78.4%
Rates of diabetes and obesity	Diabetes (10%); Obesity (27.2%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	50%	56%
Waste Management *	**County**	**North Carolina**
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 5,504 (0.8% of NC total) ICI: 4,654 (0.8% of NC total) MSW: 9,092 (0.8% of NC total)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	**Charlotte-Gastonia-Rock Hill****	**North Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Lincoln County residents accounted for 0.8% of North Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN MECKLENBURG COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 88% Large family farms ($250k-$499k) 1% Very large family farms ($500k+) 1% Non-family farms 6%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	1.8%	7.3%
Number of farms	236 (<1% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	7.6%	7%
Change in farmland acres 2002-2007	-25%	-7%
Proportion of farms reporting positive net income	36%	43%
Proportion of farms with direct sales	13%	7%
Retail Infrastructure	**County**	**North Carolina**
Grocery stores/1,000 pop	0.21	0.19
Full-service restaurants/1,000 pop	0.93	0.75
SNAP-authorized stores	750 (8.5% of SNAP-auth. stores in NC)	8,805
Farmers markets	10 (4.3% of NC farmers markets)	230
Consumption, Access, and Health	**County**	**North Carolina**
Proportion of population with inadequate fruit and vegetable consumption	77%	78.4%
Rates of diabetes and obesity	Diabetes (8.5%); Obesity (25.6%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	54%	56%
Waste Management *	**County**	**North Carolina**
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 65,853 (9.8% of NC total) ICI: 55,680 (9.8% of NC total) MSW: 108,781 (9.8% of NC total)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	**Charlotte-Gastonia-Rock Hill****	**North Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Mecklenburg County residents accounted for 10.3% of North Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN ROWAN COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 93% Large family farms ($250k-$499k) 2% Very large family farms ($500k+) 2% Non-family farms 3%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	4.6%	7.3%
Number of farms	983 (2% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	7.2%	7%
Change in farmland acres 2002-2007	+1%	-7%
Proportion of farms reporting positive net income	32%	43%
Proportion of farms with direct sales	3%	7%
Retail Infrastructure	**County**	**North Carolina**
Grocery stores/1,000 pop	0.15	0.19
Full-service restaurants/1,000 pop	0.66	0.75
SNAP-authorized stores	128 (2% of SNAP-auth. stores in NC)	8,499
Farmers markets	2 (<1% of NC farmers markets)	230
Consumption, Access, and Health	**County**	**North Carolina**
Proportion of population with inadequate fruit and vegetable consumption	78.8%	78.4%
Rates of diabetes and obesity	Diabetes (10.8%); Obesity (31.6%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	62%	56%
Waste Management *	**County**	**North Carolina**
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 9,624 (1.4% of NC total) ICI: 8,138 (1.4% of NC total) MSW: 15,898 (1.4% of NC total)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	**Charlotte-Gastonia-Rock Hill****	**North Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Rowan County residents accounted for 1.4% of North Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN STANLY COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 89% Large family farms ($250k-$499k) 2% Very large family farms ($500k+) 6% Non-family farms 2%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	3.2%	7.3%
Number of farms	713 (1% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	2%	7%
Change in farmland acres 2002-2007	-3%	-7%
Proportion of farms reporting positive net income	39%	43%
Proportion of farms with direct sales	4%	7%
Retail Infrastructure	**County**	**North Carolina**
Grocery stores/1,000 pop	0.22	0.19
Full-service restaurants/1,000 pop	0.74	0.75
SNAP-authorized stores	53 (<1% of SNAP-auth. stores in NC)	8,499
Farmers markets	1 (<1% of NC farmers markets)	230
Consumption, Access, and Health	**County**	**North Carolina**
Proportion of population with inadequate fruit and vegetable consumption	83.3%	78.4%
Rates of diabetes and obesity	Diabetes (9.6%); Obesity (26.6%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	56%	56%
Waste Management *	**County**	**North Carolina**
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 4,228 (0.6% of NC total) ICI: 3,575 (0.6% of NC total) MSW: 6,983 (0.6% of NC total)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	**Charlotte-Gastonia-Rock Hill****	**North Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Stanly County residents accounted for 0.6% of North Carolina’s population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN UNION COUNTY (NC)

Production	County	North Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 73% Large family farms ($250k-$499k) 5% Very large family farms ($500k+) 17% Non-family farms 6%	Small family farms (<$250k) 85% Large family farms ($250k-$499k) 3% Very large family farms ($500k+) 8% Non-family farms 4%
Proportion of farmers younger than 35	1.4%	7.3%
Number of farms	1,107 (2% of NC farms)	52,913
Proportion of farms growing fruit & vegetables	1.4%	7%
Change in farmland acres 2002-2007	-7%	-7%
Proportion of farms reporting positive net income	46%	43%
Proportion of farms with direct sales	4%	7%
Retail Infrastructure	**County**	**North Carolina**
Grocery stores/1,000 pop	0.13	0.19
Full-service restaurants/1,000 pop	0.43	0.75
SNAP-authorized stores	139 (1.6% of SNAP-auth. stores in NC)	8,499
Farmers markets	2 (<1% of NC farmers markets)	230
Consumption, Access, and Health	**County**	**North Carolina**
Proportion of population with inadequate fruit and vegetable consumption	76.3%	78.4%
Rates of diabetes and obesity	Diabetes (8.3%); Obesity (27.9%)	Diabetes (9.1%); Obesity (27.8%)
Proportion of children eligible for free/reduced-price lunch	36%	56%
Waste Management *	**County**	**North Carolina**
Estimated annual tons of residential food waste, commercial food waste (ICI), and municipal solid food waste (MSW)	Residential: 14,327 (2.1% of NC total) ICI: 12,114 (2.1% of NC total) MSW: 23,667 (2.1% of NC total)	Residential: 673,362 ICI: 569,343 MSW: 1,112,308
Equity	**Charlotte-Gastonia-Rock Hill****	**North Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($20,320); animal slaughter and processing ($23,750); food prep/service ($20,130)

*In 2012, Union County residents accounted for 2.1% of North Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN UNION COUNTY (SC)

Production	County	South Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 99% Large family farms ($250k-$499k) <1% Very large family farms ($500k+) 1% Non-family farms <1%	Small family farms (<$250k) 92% Large family farms ($250k-$499k) 1% Very large family farms ($500k+) 3% Non-family farms 3%
Proportion of farmers younger than 35	1.4%	6.8%
Number of farms	262 (1% of SC farms)	25,867
Proportion of farms growing fruit & vegetables	3.1%	4%
Change in farmland acres 2002-2007	-11%	+1%
Proportion of farms reporting positive net income	23%	35%
Proportion of farms with direct sales	4%	5%
Retail Infrastructure	**County**	**South Carolina**
Grocery stores/1,000 pop	0.17	0.19
Full-service restaurants/1,000 pop	0.58	0.77
SNAP-authorized stores	38 (<1% of SNAP-auth. stores in SC)	5,146
Farmers markets	1 (1% of SC farmers markets)	121
Consumption, Access, and Health	**County**	**South Carolina**
Proportion of population with inadequate fruit and vegetable consumption	86.6%	80.9%
Rates of diabetes and obesity	Diabetes (11.9%); Obesity (35.8%)	Diabetes (10.5%); Obesity (31.5%)
Proportion of children eligible for free/reduced-price lunch	65.8%	54.5%
Waste Management *	**County**	**South Carolina**
Tons of food waste recycled	0 (0% of SC total)	291,737
Equity	**Charlotte-Gastonia-Rock Hill****	**South Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($19,840); animal slaughter and processing ($23,620); food prep/service ($19,610)

*In 2012, Union County residents accounted for 0.6% of South Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

SNAPSHOT OF LOCAL FOOD SYSTEM IN YORK COUNTY (SC)

Production	County	South Carolina
Farms by size (by gross sales)	Small family farms (<$250k) 96% Large family farms ($250k-$499k) <1% Very large family farms ($500k+) 1% Non-family farms 3%	Small family farms (<$250k) 92% Large family farms ($250k-$499k) 1% Very large family farms ($500k+) 3% Non-family farms 3%
Proportion of farmers younger than 35	1.9%	6.8%
Number of farms	1,038 (4% of SC farms)	25,867
Proportion of farms growing fruit & vegetables	7.5%	4%
Change in farmland acres 2002-2007	+4%	+1%
Proportion of farms reporting positive net income	28%	35%
Proportion of farms with direct sales	5%	5%
Retail Infrastructure	**County**	**South Carolina**
Grocery stores/1,000 pop	0.18	0.19
Full-service restaurants/1,000 pop	0.57	0.77
SNAP-authorized stores	205 (4% of SNAP-auth. stores in SC)	5,146
Farmers markets	3 (3% of SC farmers markets)	121
Consumption, Access, and Health	**County**	**South Carolina**
Proportion of population with inadequate fruit and vegetable consumption	80.6%	80.9%
Rates of diabetes and obesity	Diabetes (9.0%); Obesity (29.4%)	Diabetes (10.5%); Obesity (31.5%)
Proportion of children eligible for free/reduced-price lunch	40.5%	54.5%
Waste Management *	**County**	**South Carolina**
Tons of food waste recycled	19,961 (7% of SC total)	291,737
Equity	**Charlotte-Gastonia-Rock Hill****	**South Carolina**
Wages throughout the food system sectors	Average annual wages: farmworkers and laborers ($22,590); animal slaughter and processing ($23,140); food prep/service ($20,830)	Average annual wages: farmworkers and laborers ($19,840); animal slaughter and processing ($23,620); food prep/service ($19,610)

*In 2012, York County residents accounted for 5% of South Carolina's population.

**Bureau of Labor Statistics Metropolitan Region defined as: Anson, Cabarrus, Gaston, Mecklenburg, and Union counties in NC, and York County in SC.

APPENDIX D: COUNTY SNAPSHOT METHODOLOGY

The county snapshots were developed for the CONNECT Our Future project to support community efforts to create a sustainable food system in the project region. The local food system information presented in the snapshots offers perspective and context for each county and provides a way for local stakeholders to identify capacity and establish priorities for action.

Each food system variable presented in the snapshots was chosen based on the criteria: (1) data must relate directly to local food system development, (2) data must be obtainable and available to the public, (3) data must come from a reliable, credible source, and (4) collectively, the data must give an idea of the social, economic, and environmental components of the local food system.

The snapshots should be used as a starting point for communities to better understand the dynamics of the food system where they live. The snapshots are concise by design; all counties in the project region are encouraged to investigate the elements of their local food system in greater depth to develop a well-rounded view of the opportunities, assets, and obstacles to food localization efforts in their community.

PRODUCTION

FARMS BY SIZE (BY GROSS SALES)

Though very large farms produce a majority of the food Americans eat, most of the farms in the nation are smaller farms. In the project region, small family farms earning less than $250,000 per year dominate. Within this group, 10 percent of small family farms in the region have sales of less than $100,000 per year, and 17 percent are considered limited-resource farms (any small farms with gross sales less than $100,000, total farm assets less than $150,000, and total income less than $20,000). Another 39 percent of the small family farms are run by operators who report a major occupation other than farming, and another 24 percent report that they are retired. All together, only one percent of the small family farms in the region farm as their primary source of income, are not retired, and earn $100,000 to $250,000 per year.

Data Source: Farm typology in the 2007 Census of Agriculture. Small farms are those with sales less than $250,000 per year and include retirement farms, residential/lifestyle farms, and limited resource farms. Large family farms are those with annual sales between $250,000 and $499,999. Very large family farms are those with annual sales of $500,000 or more. Non-family farms are farms organized as non-family corporations or cooperatives, as well as farms operated by hired managers.
http://www.agcensus.usda.gov/Publications/2007/Full_Report/

PROPORTION OF FARMERS YOUNGER THAN 35

The average age of all U.S. farm operators has been greater than 50 years of age since at least the 1974 census. The average age of farmers in each of the counties of the CONNECT Our Future project region is higher than the national average of 57.1 years of age. The question of who will continue to farm as a large number of farmers approach retirement is a pressing issue for each of the counties in the region.

Data Source: Total number of farmers younger than 35 years of age in the 2007 Census of Agriculture.
http://www.agcensus.usda.gov/Publications/2007/Full_Report/

NUMBER OF FARMS, FARMS GROWING FRUITS AND VEGETABLES, AND CHANGES IN FARMLAND ACRES

For a local food system to operate effectively, there must be enough farms growing a sufficient quantity and variety of food to support a healthy diet for the local population. While it is *not* assumed that a local food system must supply the entire caloric needs of the local population, there must be a base number of food-producing farms and acres of farmland in the region to supply product to a number of diverse local food outlets (e.g., farmers markets, roadside stands, restaurants, grocery stores, schools, etc.) in order for a local food system to flourish. It should be noted that for these snapshots, data is provided on the proportion of farms growing fruits and vegetables rather than the volume of fruit and vegetable production. This was an intentional choice to show that the majority of farm production in most regions is NOT dedicated to fresh produce food for human consumption, but to commodity crops like grains and hay for animal consumption, or to meats for the global meat industry. For this reason, this figure should not be viewed as a statement on the dearth of fruits and vegetables being grown, but on the abundance of farming that produces products other than food.

Data Source: Total number of farms recorded in the 2007 Census of Agriculture.

http://www.agcensus.usda.gov/Publications/2007/Full_Report/

Data Source: Acres of farmland as recorded in the 2002 and 2007 Census of Agriculture. http://www.agcensus.usda.gov/Publications/2007/Full_Report/

Data Source: Value of sales by commodity or commodity group. Fruits, tree nuts, and berries; Vegetables, melons, potatoes, and sweet potatoes.
http://www.agcensus.usda.gov/Publications/2007/Full_Report/

PROPORTION OF FARMS REPORTING POSITIVE NET INCOME

No matter the infrastructure or enthusiasm a community may have for local food, no local food system is sustainable unless the farmers providing the food are able to make a living. It should be noted that many farmers earn extra income from off-farm jobs that are not reported by the Census of Agriculture. Therefore, it is difficult to determine which farms are actually losing money overall and which farms are financially viable due to tax credits and outside income. Nevertheless, farm income data is a useful way to understand a broad pattern of the financial profile of a region's farms.

Data Source: From the 2007 Census of Agriculture, net cash farm income is derived by subtracting total farm expenses from total sales, government payments, and other farm-related income. Depreciation is not used in the calculation of net cash farm income. Farms with net gains include those operations that broke even.
http://www.agcensus.usda.gov/Publications/2007/Full_Report/

PROPORTION OF FARMS WITH DIRECT SALES

Direct markets provide farmers with an easy point of entry into local markets; they build consumer awareness and loyalty, raise the visibility of agriculture, and build demand across a variety of local market segments. Direct markets also have the added potential to increase access to fresh foods for communities with food needs. As a variable in the local food system, changes in the proportion of farms participating in direct sales over time provides insight into the vitality and growth of the local food economy in a region.

Data Source: Direct sales refer to the value of agricultural products sold directly to individuals for human consumption from roadside stands, farmers markets, u-pick, etc. It excludes non-edible products such as nursery crops, cut flowers, and wool but includes livestock sales as reported in the 2007 Census of Agriculture. Sales of agricultural products by vertically integrated operations through their own processing and marketing operations are excluded. http://www.agcensus.usda.gov/Publications/2007/Full_Report/

RETAIL INFRASTRUCTURE

GROCERY STORES/1,000 POP

Among Americans, grocery stores tend to be the primary source for food purchases intended for at-home consumption. The prevalence of grocery stores per 1,000 individuals in a community indicates the availability of foods for at-home consumption (though not their proximity to specific populations). As individuals become more connected to their food and make food-purchasing choices based on decisions beyond price (place of origin, production practices, unique varieties), niche grocery retailers (e.g., Whole Foods, Fresh Market, Trader Joes) are more likely to be attracted to the area, and the ratio of grocery store options to residents increases.

Data Source: The number of supermarkets and grocery stores per 1,000 county residents. Grocery stores include establishments generally known as supermarkets and smaller grocery stores primarily engaged in retailing a more specific line of food, such as canned and frozen foods, fresh fruits and vegetables, and fresh or prepared meats, fish, and poultry. Included in this industry are delicatessen-type establishments primarily engaged in retailing a specific line of food. Convenience stores, with or without gasoline sales, are excluded. Large general merchandise stores that also retail food, such as supercenters and warehouse club stores, are excluded. Data is for 2009.
Store data are from the U.S. Census Bureau, County Business Patterns.
http://www.census.gov/econ/cbp/index.html
Population data are from the U.S. Census Bureau, Population Estimates.
http://www.census.gov/popest/index.html

FULL-SERVICE RESTAURANTS/1,000 POP

A considerable portion of resident food spending occurs in restaurants, and a high proportion of full-service restaurants per 1,000 residents is an indicator of a demand for variety in food options by residents within a community. A high proportion of restaurants to residents within a community can also be an indicator of a dedication to a food-based culture, as well as the availability of business opportunities for both independent restaurant owners and local farmers.

Data Source: The number of full-service restaurants in the county per 1,000 residents. Full-service restaurants include establishments primarily engaged in providing food services to patrons who order and are served while seated (i.e., waiter/waitress service) and pay after eating. These establishments may provide this type of food service to patrons in combination with selling alcoholic beverages, providing take-out services, or presenting live non-theatrical entertainment. The data is for 2009.
Restaurant data are from the U.S. Census Bureau, County Business Patterns.
http://www.census.gov/econ/cbp/index.html
Population data are from the U.S. Census Bureau, Population Estimates.
http://www.census.gov/popest/index.html

SNAP-AUTHORIZED STORES

Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps, refers to the federal assistance program which helps qualifying low-income individuals and families to purchase food. Since 2002, Electronic Benefits Transfer (EBT) machines have been required to complete all SNAP transactions. SNAP-authorized stores may include grocery stores, supercenters, specialty food stores, and convenience stores. As a variable in a local food system, a count of SNAP-authorized food stores represents both the prevalence of food-insecure populations in a community, as well as the opportunity to provide fresh, local, and healthy options in the locations where low-income families shop.

Data Source: The number of stores in the county authorized to accept SNAP (Supplemental Nutrition Assistance Program, previously called Food Stamp Program) benefits. Stores authorized for SNAP include: supermarkets; large, medium, and small grocery stores and convenience stores; superstores and supercenters; warehouse club stores; specialized food stores (retail bakeries, meat and seafood markets, and produce markets); and meal service providers that serve eligible persons. Store data is from USDA's Food and Nutrition Service, SNAP Benefits Redemption Division for the year 2010.
http://www.ers.usda.gov/data-products/food-environment-atlas/data-access-and-documentation-downloads.aspx#.UhZkvRtPnvQ

FARMERS MARKETS

The presence of farmers markets in a community indicates both the availability of fresh local food in a community, and an opportunity for community members to connect with where their food comes from and who grows it. Farmers markets also provide economic opportunities for farms that are interested in participating in the local food system. Note: more is not always better, especially with this variable. Number of farmers markets is not synonymous with size or quality, and as with any other business or product, too much supply with too little demand can be just as problematic as too much demand with too little supply.

Data Source: USDA's National Farmers Market Directory, maintained by AMS Marketing Services, is designed to provide members of the public with convenient access to information about U.S. farmers market locations, directions, operating times, product offerings, and accepted forms of payment. Market information included in the Directory is voluntary and self-reported to AMS by market managers, representatives from state farmers market agencies and associations, and other key market personnel.
http://search.ams.usda.gov/farmersmarkets/#

CONSUMPTION, ACCESS, AND HEALTH

PROPORTION OF POPULATION WITH INADEQUATE FRUIT AND VEGETABLE CONSUMPTION

Local food systems promote fresh farm products that primarily consist of fresh produce and lean meats. As a region begins to embrace a local food system, and as a community begins to shift to favor local foods, the variable of fruit and vegetable consumption should show a positive trend towards increased fruit and vegetable consumption.

Data Source: Data are based on the percentage of respondents who report regularly consuming five or more servings of fruits or vegetables each week. Fried potatoes and chips are excluded. Percentages are age-adjusted and only pertain to the non-institutionalized population aged 18 and up.
Community Commons Community Health Needs Assessment (CHNA) Full Health Indicators Report, as reported from the Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System: 2005-09 and Accessed using the Health Indicators Warehouse.

RATES OF DIABETES AND OBESITY

The prevalence of food-related illnesses like diabetes and obesity in the population are often used as a proxy measure for the influence of the food environment on community health. A local food system “environment” is characterized by plentiful access to fresh or minimally processed fruits, vegetables, grains, and lean meats. When these types of whole foods become the staples of people’s diets, the prevalence of food-related illness decreases in the population (Henderson et al., 2011 “Health Impact Assessment: Farm to School and School Garden Policy,” HB 2800, Upstream Public Health and the Health Impact Project).

Data Source: The National Diabetes Surveillance system produces data estimating the prevalence of diagnosed diabetes and population obesity by county using data from CDC's Behavioral Risk Factor Surveillance System (BRFSS) and data from the U.S. Census Bureau’s Population Estimates Program. The BRFSS is an ongoing, monthly, state-based telephone survey of the adult population. The survey provides state-specific information on behavioral risk factors and preventive health practices. Respondents were considered to have diabetes if they responded "yes" to the question, "Has a doctor ever told you that you have diabetes?" Women who indicated that they only had diabetes during pregnancy were not considered to have diabetes. Respondents were considered obese if their body mass index was 30 or greater. Body mass index (weight [kg]/height [m]2) was derived from self-report of height and weight. http://apps.nccd.cdc.gov/DDT_STRS2/CountyPrevalenceData.aspx?mode=OBS

PROPORTION OF CHILDREN ELIGIBLE FOR FREE/REDUCED-PRICE LUNCH

Research shows a positive correlation between low-income status and lower consumption of fruits and vegetables (Horodynski et al., 2010 “Low-income African American and Non-Hispanic White mothers' self-efficacy, “picky eater” perception, and toddler fruit and vegetable consumption”). The variable of the percentage of children eligible for free/reduced-price lunch in school cafeterias serves a dual purpose of identifying the proportion of families in a community that may not be consuming adequate amounts of fruits and vegetables, and also supplying an opportunity for local food advocates. School cafeterias provide up to two meals per day for needy students. Communities can impact the individual health of this portion of the population by ensuring these meals are replete with healthy, fresh, local foods.

Data Source: Total student counts and counts for students eligible for free and reduced-price lunches are acquired for the school year 2009-2010 from the NCES Common Core of Data Public School Universe Survey.

Community Commons Community Health Needs Assessment (CHNA) Full Health Indicators Report, as reported in the National Center for Education Statistics, Common Core of Data: 2010-11.

WASTE MANAGEMENT

ESTIMATED ANNUAL TONS OF RESIDENTIAL FOOD WASTE, COMMERCIAL FOOD WASTE (ICI), AND MUNICIPAL SOLID WASTE (MSW)

Waste management, and food waste management in particular, is an important component of a regional food system. Estimated annual tons of residential food waste, commercial food waste, and municipal solid waste are key indicators of the amount of food that is wasted within a regional food system as well as the amounts of food waste that may be diverted from disposal in landfills. As population growth leads to increased pressures on agricultural land and other resources, a sustainable system of waste management can help a community to make better use of natural resources, reduce environmental impacts, provide financial savings and entrepreneurship opportunities, and improve its ability to meet food demand.

Data Source: North Carolina 2012 Food Waste Generation Study used three methods to quantify food waste in North Carolina: (1) share of population using state waste characterization reports, (2) share of generators using direct studies, and (3) EPA-provided percentages.
North Carolina Department of Environment and Natural Resources (2012) North Carolina Food Waste Generation Study.
http://portal.ncdenr.org/c/document_library/get_file?uuid=ae965d91-c5a1-47aa-8f09-9afbbfa6598f&groupId=38322
Data Source: Tons of waste received by South Carolina composting facilities in fiscal year 2012.
Templeton, Catherine (2012) South Carolina Solid Waste Management Annual Report. DHEC's Division of Mining & Solid Waste Management.
http://www.scdhec.gov/environment/lwm/recycle/pubs/swm_FY12_ALL.pdf

EQUITY

WAGES THROUGHOUT THE FOOD SYSTEM SECTORS

According to the United States Bureau of Labor Statistics, six in ten workers earning the minimum wage or less in 2011 were employed in service occupations, primarily in food preparation and food serving. According to a 2012 report from the U.S. Department of Labor, food preparation and serving-related occupations make up the lowest-paying major occupational group in the country. In addition to low wages, food system jobs consistently rank poorly in terms of their physical demands on workers, work environment, hiring outlook, and worker stress levels. An equitable food system should operate in a just manner from producer to consumer. This includes decent treatment of workers, safe working conditions, and living wages. For the snapshots, the variable of worker wages was chosen as it is a readily available, quantified discrete value that is easily compared and analyzed.

Data Source: These estimates are calculated with data collected from employers in all industry sectors in Charlotte-Gastonia-Rock Hill, NC-SC, a metropolitan statistical area that includes parts of North Carolina and South Carolina. Wages for the OES survey are straight-time, gross pay including base rate; cost-of-living allowances; guaranteed pay; hazardous duty pay; incentive pay, including commissions and production bonuses; and tips. Excluded are premium pay; overtime pay; severance pay; shift differentials; nonproduction bonuses; employer cost for supplementary benefits; and tuition reimbursements. OES receives wage rate data for the federal government, the U.S. Postal Service, and some state governments. For the remaining establishments, the OES survey collects wage data in 12 intervals. For each occupation, respondents are asked to report the number of employees paid within specific wage intervals. The intervals are defined both as hourly rates and the corresponding annual rates, where the annual rate for an occupation is calculated by multiplying the hourly wage rate by a typical work year of 2,080 hours. The responding establishments are instructed to report the hourly rate for part-time workers, and to report annual rates for occupations that are typically paid at an annual rate but do not work 2,080 hours per year, such as teachers, pilots, and flight attendants.
Bureau of Labor Statistics Occupational Employment Statistics: May 2012 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates.
http://www.bls.gov/oes/current/oes_16740.htm#35-0000

APPENDIX E: 2013 REGIONAL FOOD SYSTEM STAKEHOLDER SURVEY DATA

This report summarizes the results of three stakeholder surveys conducted for CONNECT Our Future, a project focused on building regional economic development within a 14-county bi-state region. The CONNECT Our Future project region covers 7,000 square miles and is home to over 2.5 million residents. To understand the communities and residents of the region, this research engaged individuals from the public, private, and nonprofit sectors as key informants. Key informants are defined as community members who have expert knowledge of local conditions and who have some authority to share this information with researchers.

The purpose of the key informant surveys was to help ASAP, CEFS, and CFSA better understand the current conditions of the food system in the project region, inventory community assets, assess opportunities, and identify barriers to local food system development. The information gathered from these surveys will help ASAP, CEFS, CFSA, and the CONNECT Our Future project teams better guide the growth of local food and farming in the region.

The surveys were intended for regional stakeholders with a professional connection to community food and farm issues in the areas of agriculture and farming, health and social services, and food-related businesses. Appalachian Sustainable Agriculture Project (ASAP) conducted and analyzed the surveys.

SURVEY METHODS

The survey instrument was developed by ASAP, CEFS, CFSA, and the CONNECT Our Future Food Systems Work Group.

PARTICIPANT RECRUITMENT AND SURVEY ADMINISTRATION

ASAP, CEFS, CFSA, the CONNECT Our Future Food Systems Work Group gathered the list of survey participants based on existing contacts and internet searches. Targeted participants for the survey included:

- Agriculture Stakeholders
    - County agricultural extension agents

    - Local land conservancy and land trust directors
    - Farmers market managers
    - North Carolina Farm Bureau agents
- Health and Food Access Stakeholders
    - County health directors
    - Local healthy food coalitions, health alliances, and food banks
    - Department of Social Services, Food and Nutrition Services coordinators
    - Hospital health educators and dieticians
- Local Food Businesses
    - Locally based distributors and wholesalers, independently owned restaurants, independently owned grocers

The surveys were made available online through the SurveyMonkey online survey tool. The survey opened August 19, 2013 and closed on September 9, 2013.

SURVEY RESPONSE RATE

A total of 38 agriculture stakeholders were invited to participate; 28 individuals began the survey and 20 completed the survey (53%). A total of 22 health and food access stakeholders were invited to participate; 15 individuals began the survey and 14 completed the survey (64%). A total of 25 food businesses were invited to participate; 3 individuals began the survey and 1 completed the survey (4%).

SUMMARY OF FINDINGS

THE PROJECT REGION

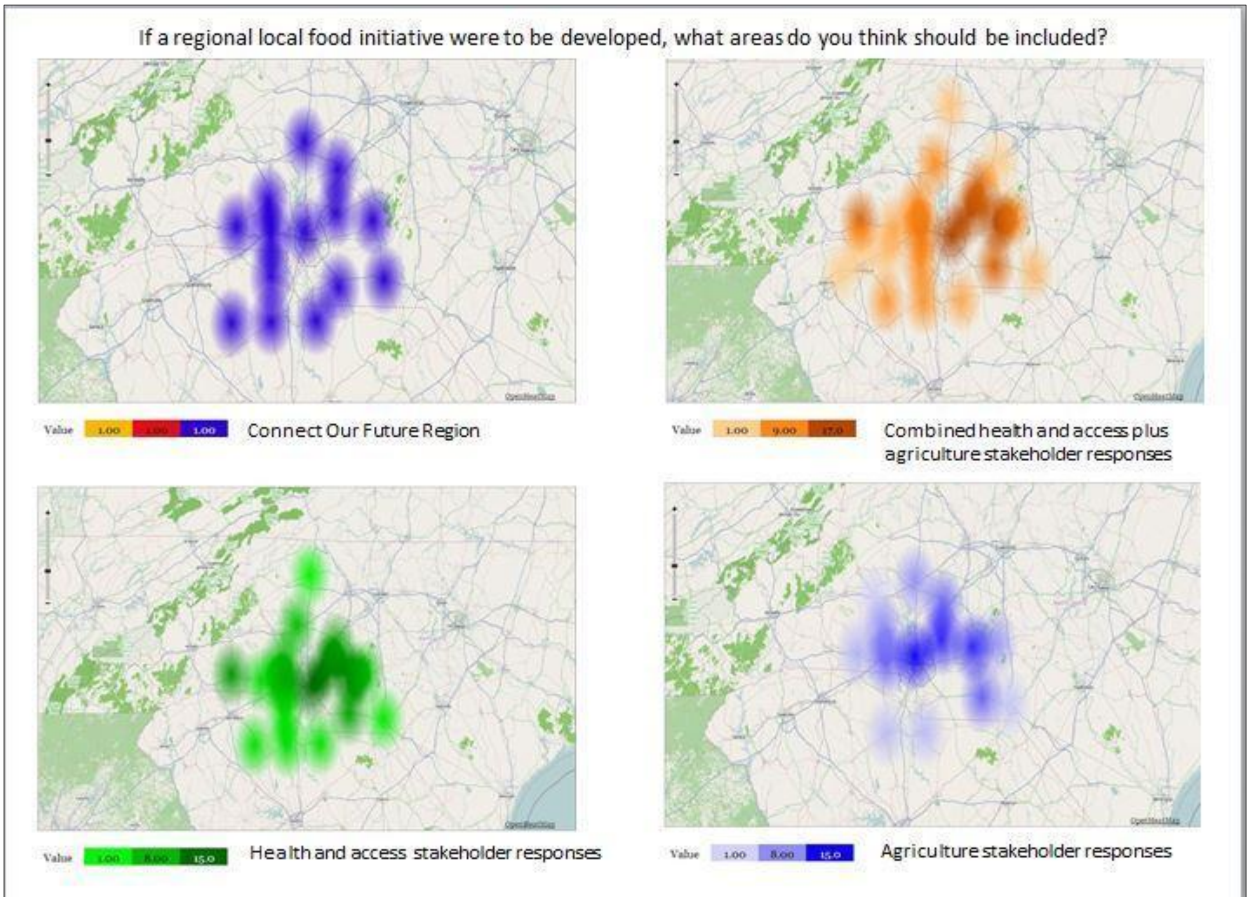
The Connect Our Future project focuses on a grouping of 14 counties in North and South Carolina that make up the Greater Charlotte Region. The stakeholder surveys asked participants to define the area they thought should be included in a local food initiative to determine if key informant perceptions of a local food region were similar or dissimilar to the CONNECT project region.

Figure 1 shows the distribution of findings from the stakeholder surveys using “heat” maps. A heat map uses graded differences in shading or color to show hierarchy for a given variable. The heat maps in Figure 1 show the density of votes for particular counties to be included in a regional local food initiative by survey respondents. Larger values are indicated by darker spots on the map, and smaller values are indicated by lighter spots. Therefore, the more votes a county receives, the darker the spot on the map. The image in the top left corner of Figure 1 shows the CONNECT Our Future project region; the color spots are all the same level of transparency showing that they are equal in hierarchy. The bottom left image shows the distribution of responses from the health and access stakeholder survey. The health and access stakeholders collectively chose all of the counties that are part of the CONNECT Our Future region. However, compared to the CONNECT Our Future region, health and access stakeholder responses showed a favoring towards North Carolina counties immediately in and surrounding Mecklenburg county and with less inclusion of the distal CONNECT counties. In addition to choosing all of the counties included in the CONNECT project region, health and access stakeholders chose six counties outside of the project region that they would include in a regional local food initiative: Davidson (1 response), Montgomery (3 responses), Richmond (1 response), Cherokee (1 response), Moore (1 response), and Spartanburg (1 response).

The bottom right image shows the distribution of responses from the agriculture stakeholder survey. Like the health and access stakeholders, the agriculture stakeholders collectively chose all of the counties that are part of the CONNECT Our Future region. Also like the health and access stakeholders, compared to the CONNECT Our Future region, agriculture stakeholder responses favored North Carolina counties in and immediately surrounding Mecklenburg County. In addition to choosing all of the counties in the CONNECT project region, the agriculture stakeholders chose three counties located outside of the project region including: Catawba (1 response), Montgomery (7 responses), and Richmond (2 responses).

The image in the top right corner combines the health and access stakeholder responses with the agriculture stakeholder responses. The composite image is very similar in scope to the CONNECT Our Future region, however with a strong emphasis on Mecklenburg and the immediately surrounding counties.

FIGURE 1. HEAT MAPS SHOWING THE DENSITY OF RESPONSES TO THE QUESTION, "IF A REGIONAL LOCAL FOOD INITIATIVE WERE TO BE DEVELOPED, WHAT AREAS DO YOU THINK SHOULD BE INCLUDED?"



COMMUNITY ASSETS AND OPPORTUNITIES

In the stakeholder surveys, key informants were asked to name local assets and opportunities in their communities that support local agriculture and locally grown foods, both for farmers and community members. The top five assets identified by stakeholders include local farmers markets (25 responses), farm supply stores (11 responses), Cooperative Extension (10 responses), retail markets (10 responses), and Farm Fresh Ventures Cooperative (8 responses).

Similar questions asked key informants to identify assets and opportunities around local food access for low-income community members. When asked what types of services and support programs exist in the community to support food access in the local food system, key informants most frequently named local food banks and food pantries (18 responses), crisis and Christian ministries (14 responses), meal delivery services (10 responses), EBT & WIC acceptance at farmers markets (8 responses), and farmers markets in general (6 responses).

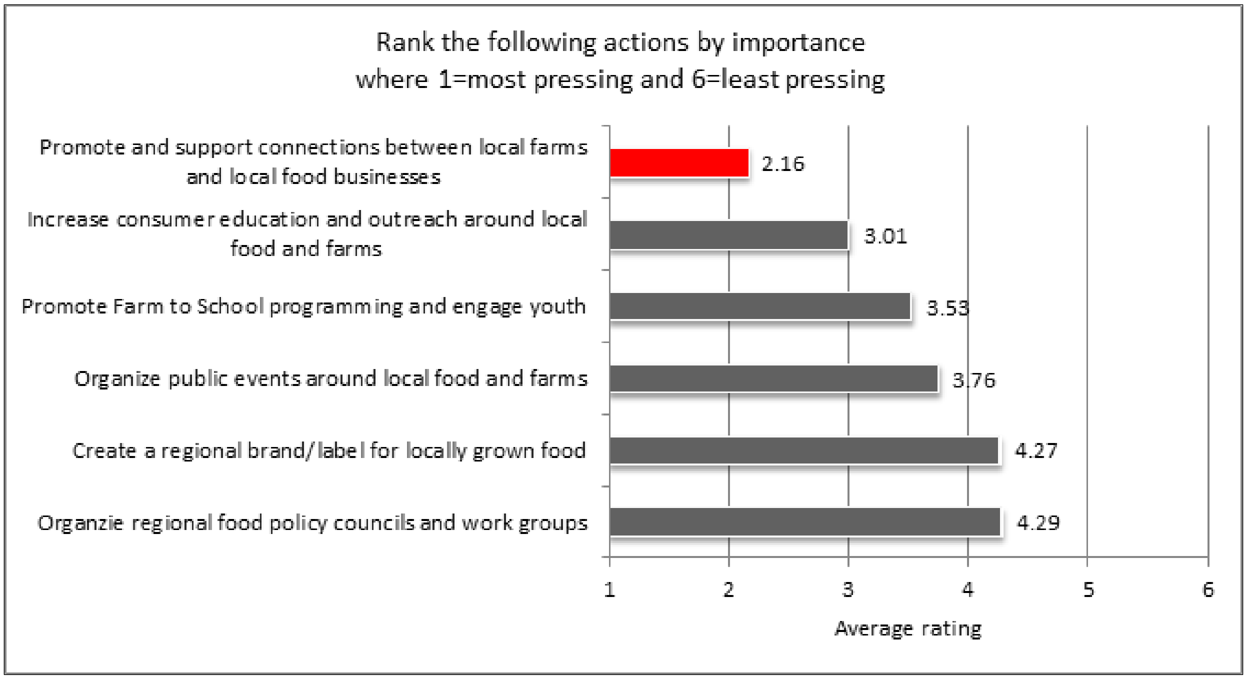
BARRIERS TO LOCAL FOOD SYSTEM DEVELOPMENT

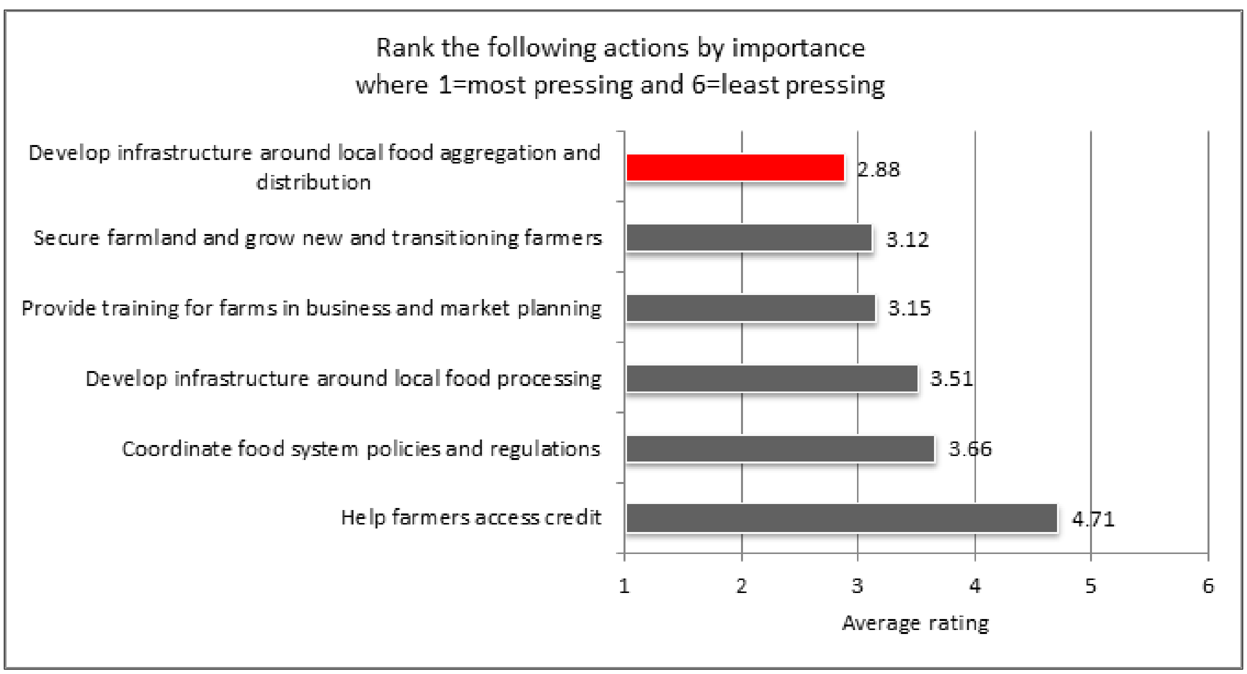
It is clear from key informant responses that there are many opportunities for local food system development in the project region. However, to get an idea of the challenges and obstacles local food system advocates and planners will face as they begin work on the ground, key informants were asked to identify the issues within their communities that they believe hinder local food system development. The stakeholder surveys yielded the following top barriers to local food system development in the project region: GAPs and food safety regulations (7 responses); food industry standards and regulations (7 responses); and zoning and building codes (2 responses).

The stakeholder surveys also asked key informants to think about the local food system support services they thought were lacking in their communities but could be developed to help support local food system efforts. The top ten choices included: increased market opportunities for farmers in both retail, wholesale, and institutional markets (13 responses); increased access to food aggregation, processing, and distribution opportunities by farmers (11 responses); Farm to School programming (6 responses); farm support organizations (5 responses); transportation opportunities for low-income individuals (5 responses); liability, insurance, food safety, and loan support for farmers (4 responses); business and market training for farmers and food businesses (4 responses); increased access to healthy food by low-income community members (4 responses); community gardens (4 responses); and increased access to farms stands and farmers markets (3 responses).

TAKING ACTION

Key informants were asked to prioritize two lists of local food system action steps. One list focused on community organizing actions around local food promotion and outreach and one list focused on agriculture and food production support. Each list provided six action steps and key informants were asked to rank the action they believed to be the most pressing in their community a “1” and the least pressing a “6.” The two charts below show the combined average rankings for the two action lists across all stakeholder survey respondents. Based on the average ranking, key informants think that promoting and supporting connections between local farms and local food businesses and developing infrastructure around local food aggregation and distribution are the most pressing local food system actions that should be taken in their communities to develop the local food system.

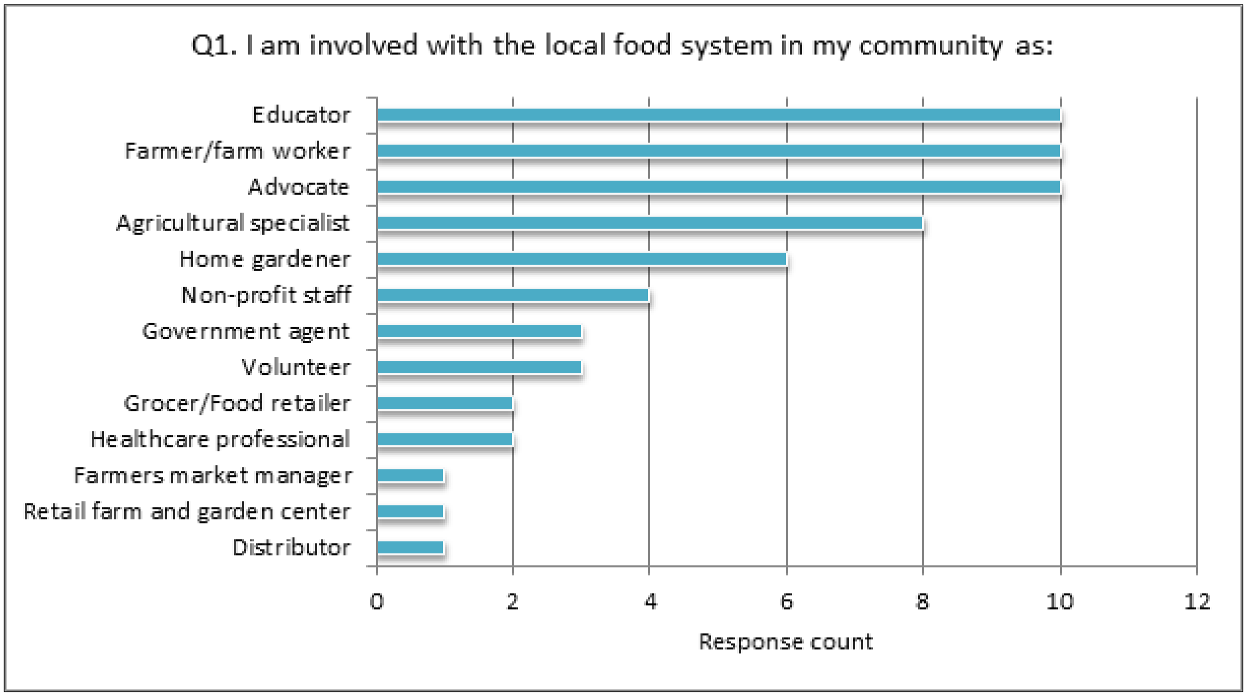




SURVEY RESULTS

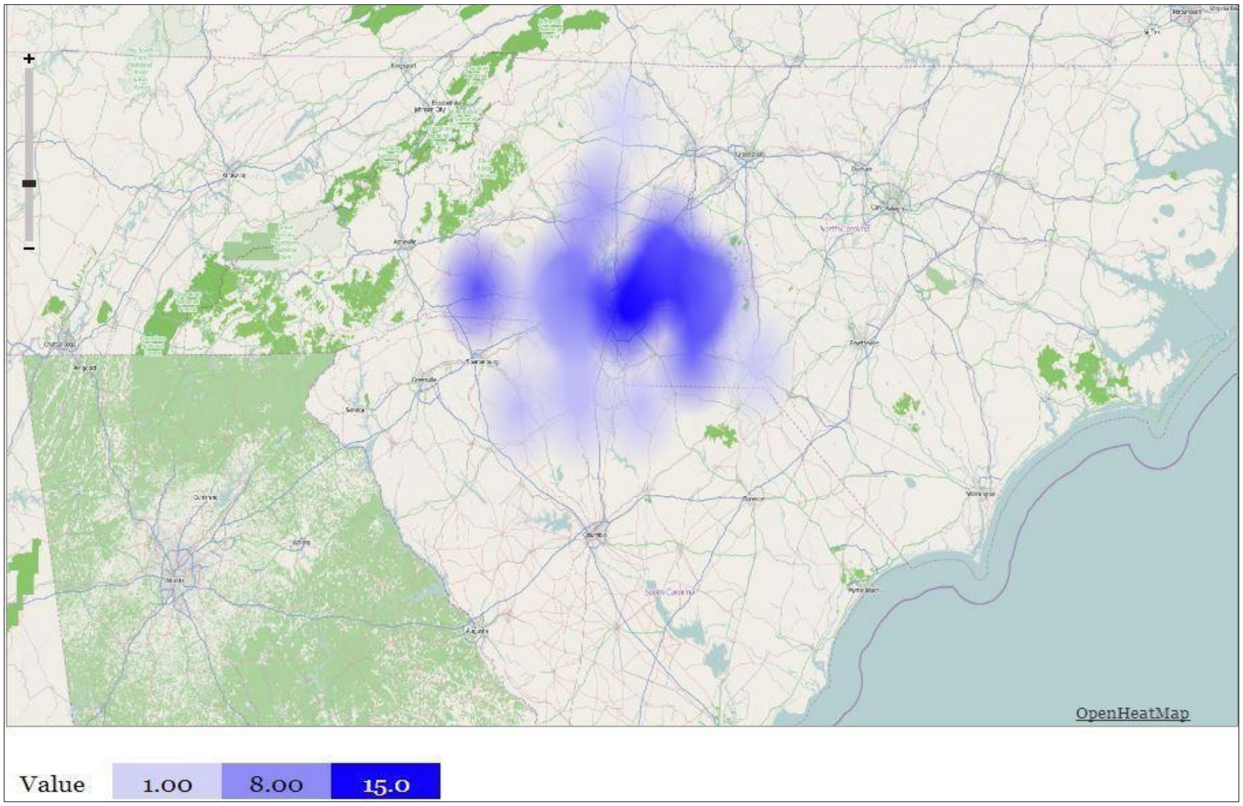
REGIONAL FOOD SYSTEM SURVEY FOR FARM AND AGRICULTURE STAKEHOLDERS

1. I am involved with the local food system in my community as: (28 responses)



2. **If a regional local food initiative were to be developed, what metropolitan areas, counties, or geographic regions do you think should be included?** (23 responses)

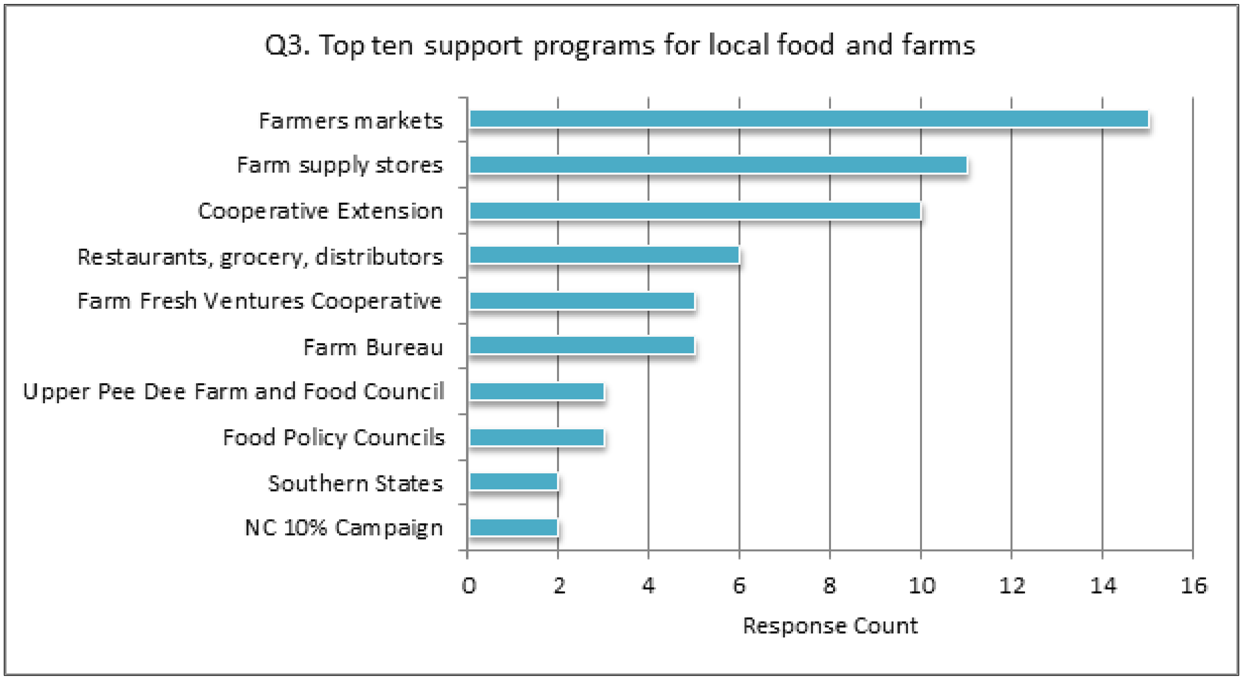
FIGURE 2. HEAT MAP SHOWING THE AREAS AGRICULTURE STAKEHOLDERS BELIEVE SHOULD BE INCLUDED IN A LOCAL FOOD INITIATIVE. THE DARKER THE AREA, THE LARGER THE NUMBER OF STAKEHOLDERS WHO THINK THAT AREA SHOULD BE INCLUDED.



All responses
Fewer than five counties
3-4 county groups i.e. Catawba, Lincoln, Gaston, and Cleveland
Charlotte
Charlotte Mecklenburg and surrounding counties
Charlotte, Cabarrus, and Rowan Co
Charlotte, Gaston, and Cabarrus
Counties grouped together that share common factors such as geography or economic base or population commonalities or even existing food councils would be my suggestion. This is somewhat complicated by the fact that this is also an area divided by a state line. However,

linking the rural counties of NC in groups of 3 or 4 counties when appropriate might give the food council more power to accomplish its goals.
South Charlotte
Stanly, Anson, and Montgomery County
Troy, Albemarle
Five or more counties
Anson, Cabarrus, Cleveland, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly and Union counties in North Carolina, and Chester, Lancaster, Union and York counties in South Carolina
Anson, Stanly, Richmond, Montgomery, and Union counties
Anson, Stanly, Union, Mecklenburg, Montgomery
Anson, Union, Stanly, Montgomery, Richmond counties
Charlotte MSA with ties to the other NC regions and the Upstate SC region?
Charlotte/Mecklenburg, Rowan/Salisbury, Concord, Kannapolis, Cabarrus County, Statesville, Monroe, Waxhaw, Indian Trail, Albemarle, Montgomery County
Gaston County + Centralina area
Greater Charlotte area
Stanly, Montgomery, Mecklenburg, Cabarrus, Rowan counties
The region you are talking about.
Radius around a point
A 150-mile radius around the local food initiative county.
Our food shed is dominated by the Charlotte metro area, so all of the counties surrounding Charlotte should certainly be included. Frankly I'm not sure that those counties could feed themselves AND Charlotte. I'd think all the counties in a 100-mile area around Charlotte would be needed to feed the area.
Other
I work statewide.
Why should anyone be left out?

3. **What programs, services, or businesses are you aware of that support local agriculture and locally grown food in your community?** (22 responses)

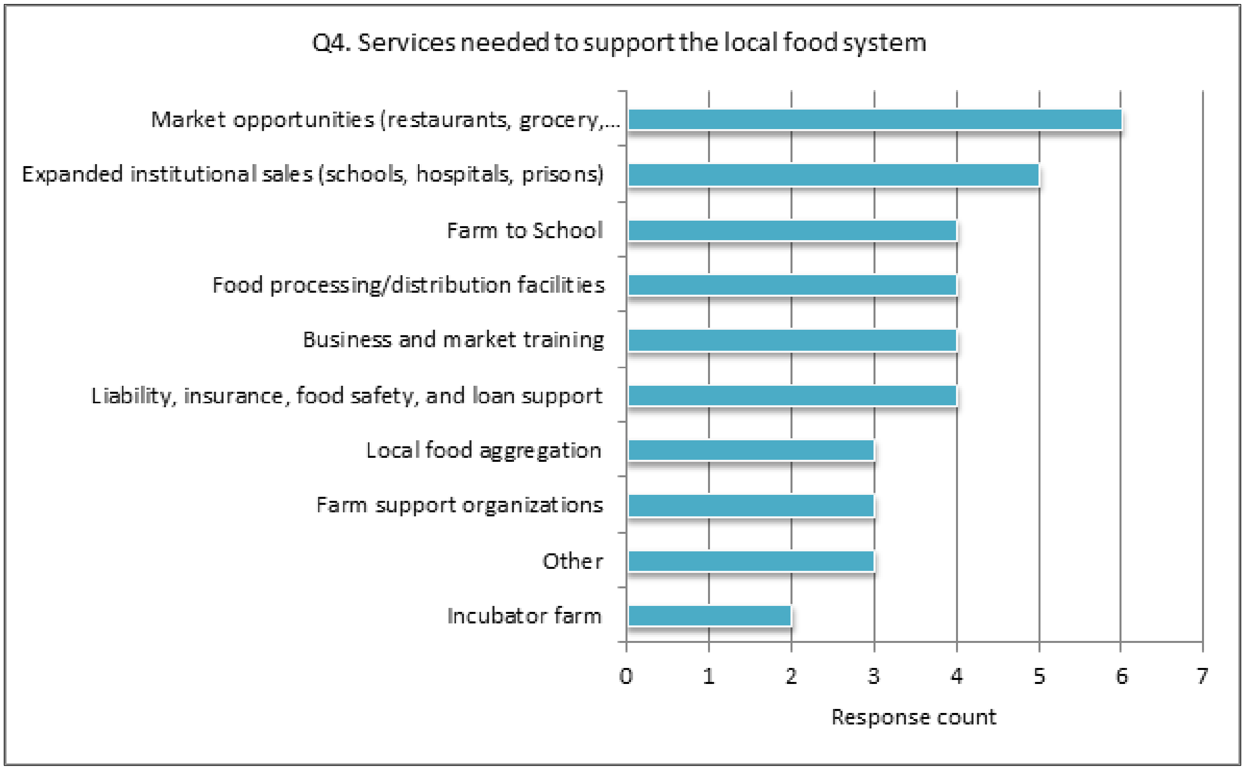


All responses
A few independent food distributors and one farm to school initiative
Albemarle Farmers Market, Off the Square (restaurant)
Carolina Farm & Garden Center, Mauney's Feed Mill, Montgomery and Stanly County Farmer's Markets
Chester County- Support: Clemson Ext, Farm Bureau and the regional office of the USDA No produce auctions Distributors: Hadden House is a large value-added reseller based in NJ but with a trucking center here;1 large fertilizer distributor;1 major rail based feed supplier No Farm to School activities Support organizations: FFA, Young Farmers of America, Farm Bureau, Tree Farmers Association Also, 1 very large livestock barn where cattle, hogs and some goats are resold; 1 farm supply store although Tractor Supply has announced it is moving here; A new farmers market in its first year
Community gardens, EBT at local farmers markets, local food grocery stores,
Cooperative Extension, Farm Fresh Ventures, Know Your Farms, Bread Riot, Carolina Farm Stewardship, SEED Foundation, Upper Pee Dee Farm and Food Council, Tractor Supply, Southern States, 10% Campaign, Piedmont Grown, etc.
Cooperative Extension, Home Grown Gaston, Farmers Markets, Food Corps

Farm Fresh Ventures Cooperative Upper PeeDee Farm & Food Council Farm Bureau Farmers Markets Anson Agrarian Society
Farm Fresh Ventures Cooperative, Inc., Anson County NC (Grower Owned)
Farmers markets, restaurants, consumers
Foothills Farmers Market, Cleveland County Farm Bureau, Meet Up to Eat Up (monthly potluck local food gathering), Pleasant City Wood Fired Grill, municipal governments, private and corporate foundations, Lowe's Foods, farm supply stores, Eat Smart Move More Coalition, Community Transformation Project, NC Cooperative Extension, Cleveland County Health Department, Uptown Shelby Association, Tour Cleveland County
Local produce markets, Farmers Market at Market Station in Albemarle
Mecklenburg Friends of Agriculture Mecklenburg Fruit and Veggie Coalition Mecklenburg Cooperative Extension Service CFES New and Beginning Farming program Sow Much Good Nourish, LLC NC 10% Campaign
NC Cooperative Extension Food Policy Councils
NC Cooperative Extension Stanly County Farmers Market Farm Fresh Ventures NCDA Upper Pee Dee Farm and Food Council
NC Cooperative Extension; Lincoln County Farmers Markets; Community Transformation Grant thru Health Dept.
T McLeods Organics in Huntersville, the Bradford store, windy hill farms,
This question isn't specific enough. If you mean my immediate community, none. If you mean the county I live in (Union), then there are groups like Farm Bureau, Cooperative Extension and Southern States that give some small support to local food. There are a very few garden centers and feed supplies stores like Secrest Feed & Seed, Monroe Hardware and Carolina Hardware that sell supplies. Carolina Home Grown is a small group of local folks who operate as Union County's Local Food Council. The Extension Master Gardeners work with school gardens, but the County school system is NOT local foods friendly. Farm Fresh Ventures is an effort by Extension and some farmers to create a food hub. There are a number of produce stands in the county, and 2 farmers markets. The Union County Health Department has done a LOT of work with Local Food. You might contact Jackie Morgan at the UCDoH about her work.
I don't know of any.
None
The above

No one is effectively doing so!!! All are failures!!!

4. What types of programs, services, or businesses do you think are lacking but should be investigated to support local agriculture and locally grown food? (21 responses)



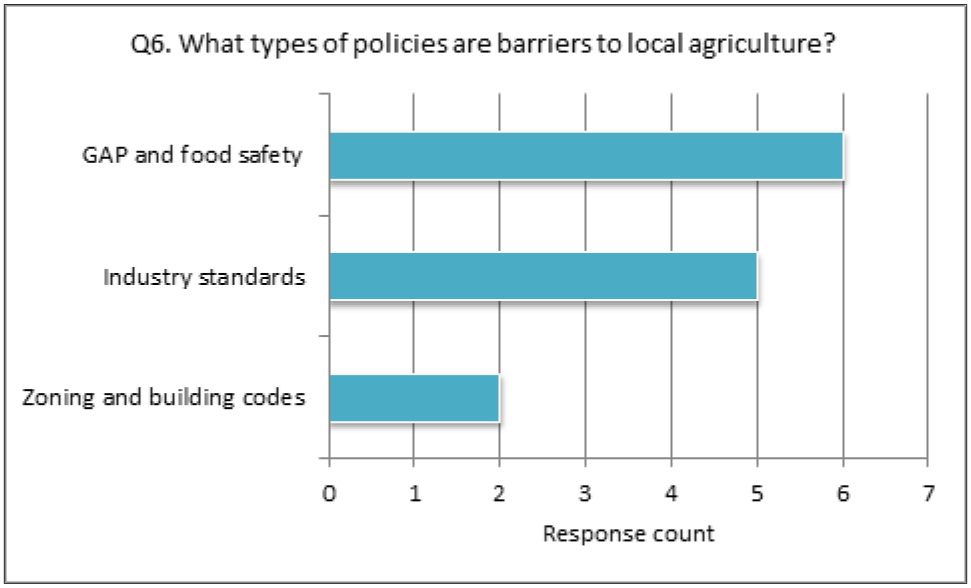
All responses
Education
An incubator farm to train new farmers and increase knowledge of existing farmers
Definitely farm to school! We are feeding are kids junk and paying top money for it.
Education about the programs
Commercial Food Hub Entrepreneur & Business Skill development for local food producers and value-added businesses
Get school children involved in gardening and food prep
Home gardening taught in high schools
Market opportunities
A local produce and meat market that's open every day to growers and shoppers
Restaurants, prisons, schools

Retail grocery and restaurants
Helping farmers markets thrive.
Locally produced non-GMO livestock feed is a MUST. Commercial kitchens and food production areas are needed in every county around Charlotte to increase the amount of value-added foods produced by small-scale growers. Something along the lines of Blue Ridge Food Ventures would be a fantastic addition.
Centralized marketing/distribution center for small-scale growers
Multiple
Affordable product liability insurance, paid full-time local food coordinator, cold storage facilities, food processing/distribution facilities, expanding institutional sales
All of the ones mentioned in #3 above (produce auctions, independent food distributors, Farm to School activities, organized farmer groups, farm supply stores or outlets, farm support organizations)
Farm incubator program, farm to jail programs, farm to hospital programs,
Financial & regulatory support
Crop insurance
Financial and loaning institutions
GAP Certification is what I hear most from a few farmers. They say that farmers need it, but it is too expensive and time-consuming.
Other
Farm/excess farm market donations to schools and food banks other than gleaning...
No one is selling anything and it is all about selling product. All anyone does is hold meetings and conduct surveys. A HUGE waste of money.
Food Hubs, regional website to find local farms and food, apps to find local farms and food, updated information from the web, incentives to use local, marketing for local.

5. **What types of policies, rules, ordinances, or regulations are you aware of that SUPPORT local food in your community?** (20 responses)

All responses
Rules in place
Backyard chicken ordinance
Food safety through NCDA
Lincoln County Farmland Protection Plan
"Local" refers to produce grown within a certain distance, not within the same county necessarily
10% local
In Mecklenburg county, not many....bureaucracy too complicated and make it almost impossible to maneuver through system!
Other comments
In Union County, it's not the policies, etc. It's partnerships that are important. That's how you get things done. It's also how you stop things from happening. If you have a partnership with a municipality or a staffer, they work with you to meet your needs and theirs.
They all hinder the local food market and favor large-scale farmers. Disband the regulators and cut off the government grants and subsidies.
Unsure of any except N.C. statutes and federal government laws.
Zoning only locally. State policies, rules, etc., are the guiding forces here.
Not sure/none
Don’t know, so far only private enterprise is supportive
Don’t know
None (6 responses)
None that I can think of
Not sure of any.

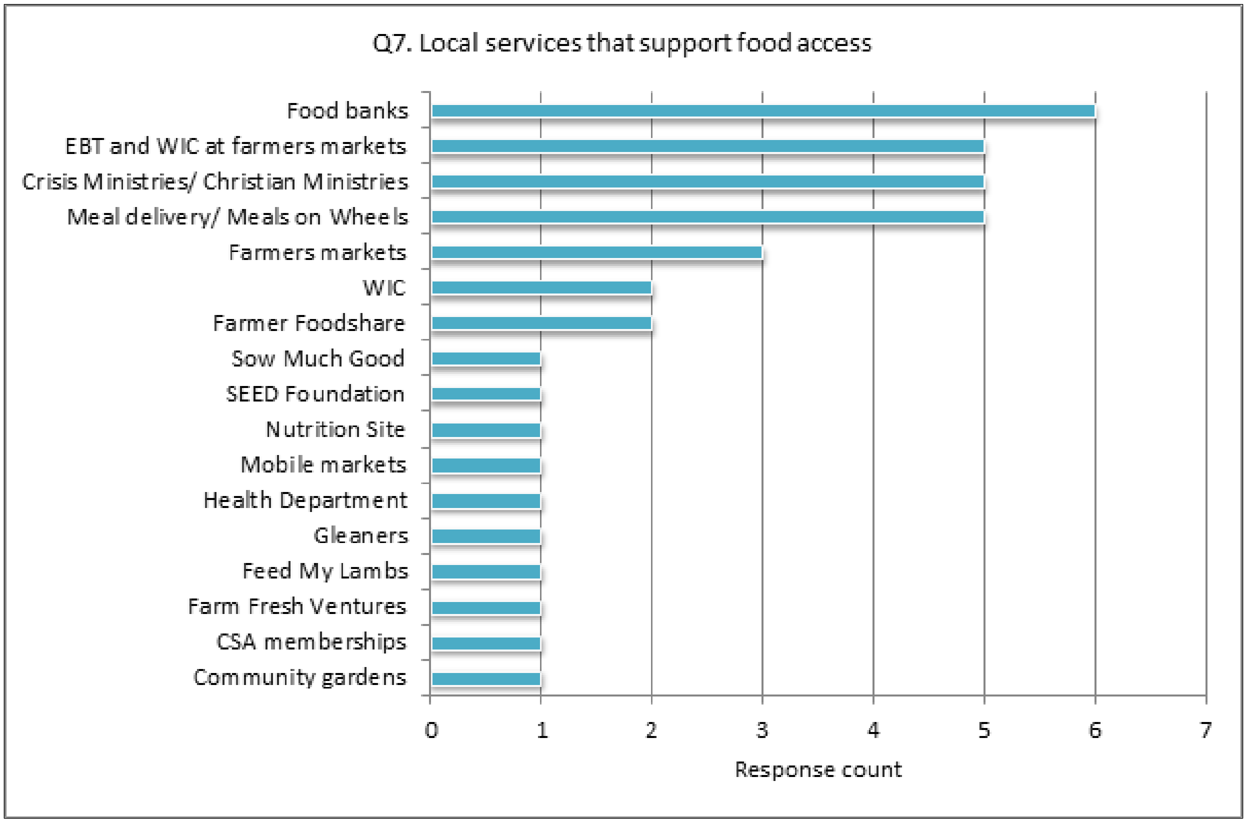
6. **What types of policies, rules, ordinances, or regulations are you aware of that are BARRIERS to local food and local farm activity in your community?** (20 responses)



All responses
GAP and other food safety rules
Illegal sale of raw milk. If a public school has a school garden, the cafeteria cannot use the food that is grown. Bull crap.
GAP - difficult and costly to obtain and prevents local farmers from providing to retail grocery and public schools
GAP certification for retailers. The new Food Safety law could be a potential barrier.
GAP certification requirement for public school food purchases
New national food safety laws
Well, the ridiculous laws against raw milk force me to buy and support SC farms
Industry rules/standards
Too many federal regulations for growers who want to sell to institutions
Too much red tape in health dept. rules
Lack of ability for school to use school garden food in the cafeteria. Lack of cold storage for farm-to-school program. Lack of cold storage for value-added businesses

Unsure of specific policies, etc. except general government "red tape."
Bureaucracy too complicated and make it almost impossible to maneuver through system!
Zoning and building rules
Location and zoning
Zoning and building codes that don't allow construction of retail outlets on agricultural property.
Other
All of them
Certification of 'organic' and county-of-origin would be helpful for produce
Has a need for local food distribution been established within county?
NA
Not enough public participation in the farmers markets
Not sure
In Union County, it's not the policies, etc. It's partnerships that are important. That's how you get things done. It's also how you stop things from happening. If you have a partnership with a municipality or a staffer, they work with you to meet your needs and theirs.

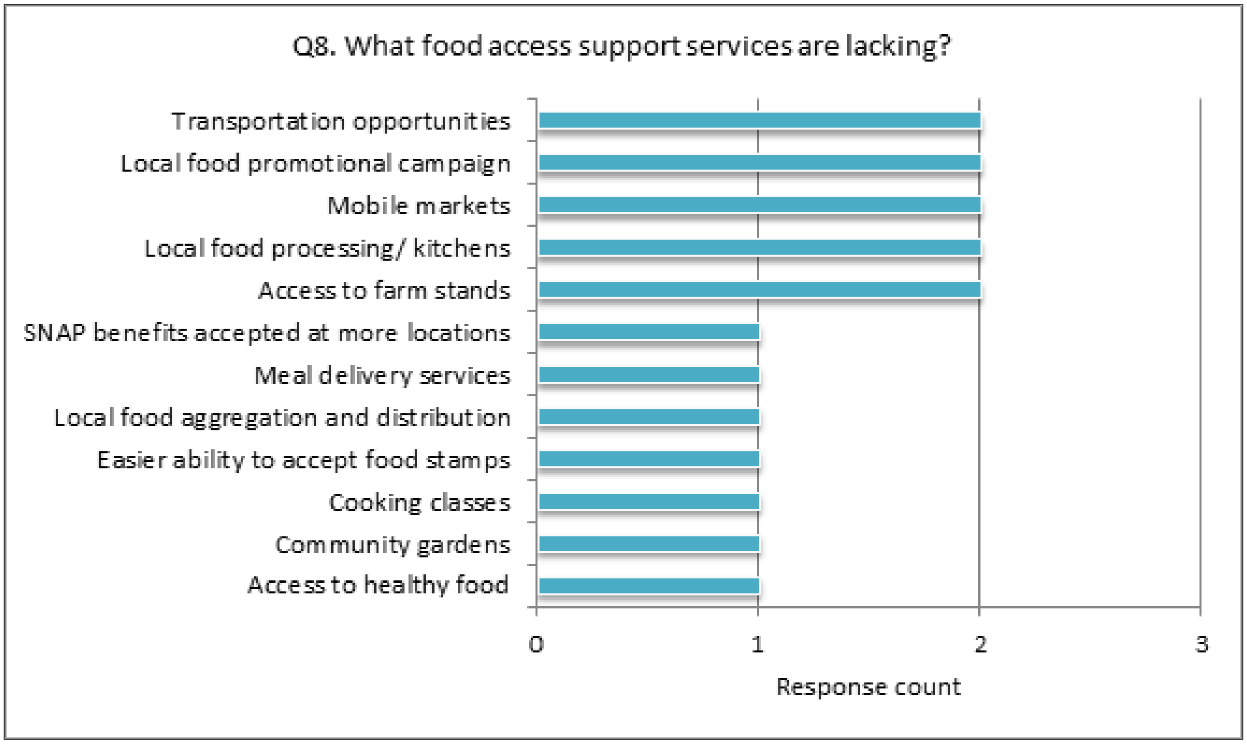
7. What local programs, services, and businesses are you aware of that support food access for low-income individuals in your community? (20 responses)



All responses
EBT access at farmers markets - food banks - low-income option CSA memberships
4 food banks, Meals on Wheels, The local farmers market
Anson Crisis Ministry, Feed My Lambs
Cooperative Christian Ministry
East Lincoln Christian Ministries; Christian Ministries (food pantry, soup kitchen, homebound meals), EBT at all three Lincoln County Farmers Markets
Farm Fresh Ventures Cooperative, INC, Anson County, NC
Farmer Foodshare (surplus food donation program), faith-based food ministries, Foothills Farmers market EBT Outreach initiative
Food bank, meal delivery,
Health Department, Local food banks, WIC, SEED Foundation planning a mobile farmers

market.
I am aware of the good banks in my area. My kids do service projects through school each year with several of them. My farmers market began participating in the NC 10% program but it requires a designated volunteer each week and we couldn't find someone
Meal delivery, Nutrition Site,
Meals on Wheels, GHA food distribution,
NA
need more emphasis on healthy foods to get kids on the right track; more gleaning fields opportunities
none
Sow Much Good, INC Local gleaners network Farmers Foodshare program
Stanly County Farmers market WIC voucher program
They all focus on unhealthy bad food. I know of none that are health conscious.
WIC @ farmers markets. Highland community garden, Highland Health Center Farmers Market
WIC, food banks, mobile markets,

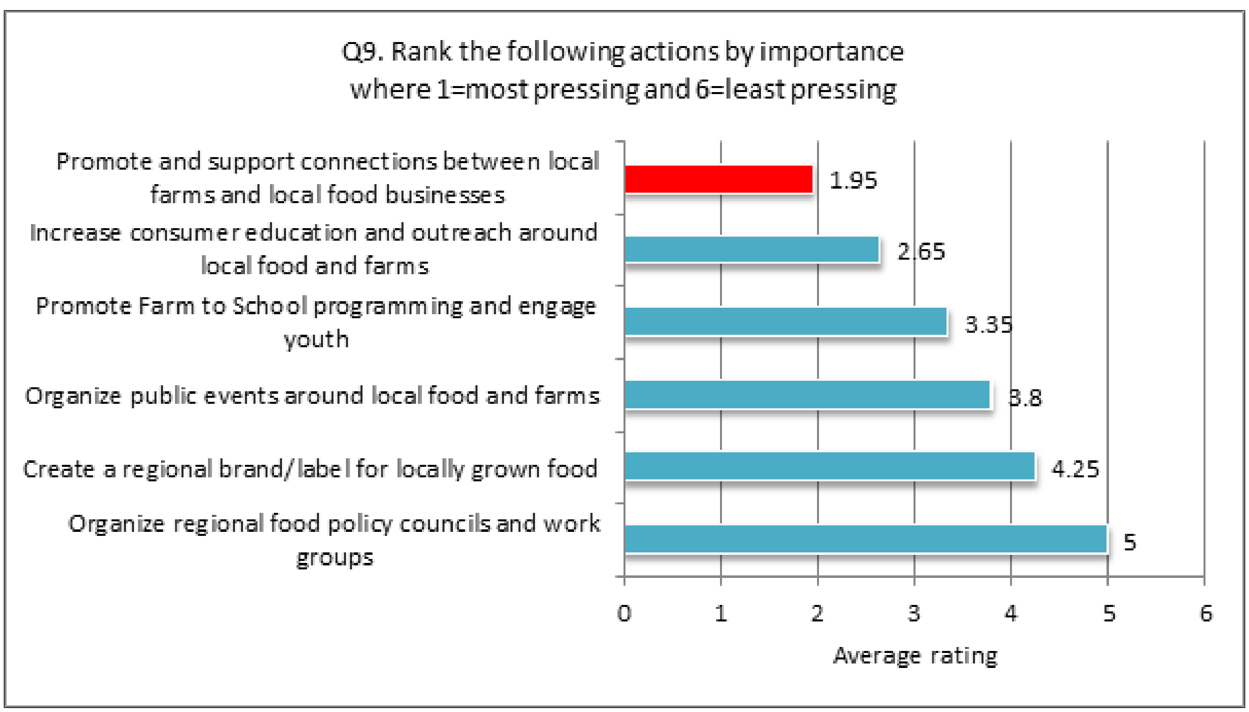
8. What types of programs, services, or businesses do you think are lacking but should be investigated to support increased food access in your community? (17 responses)



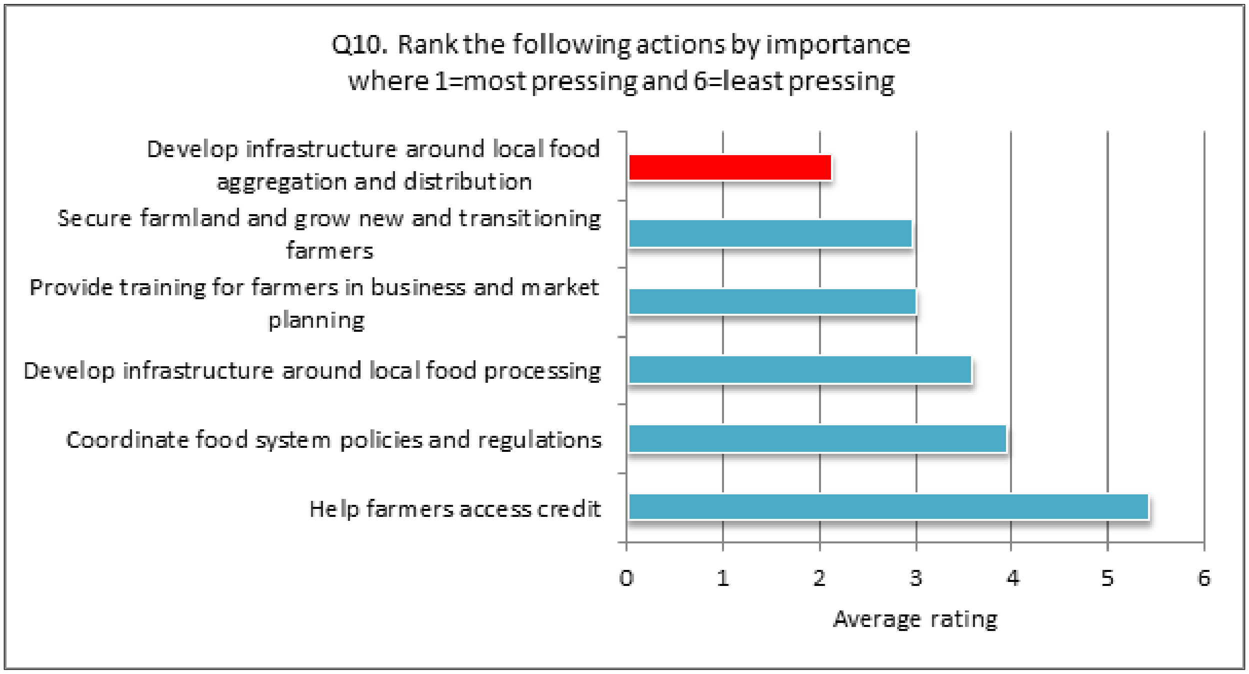
All responses
Food affordability/access support
Alternative transportation opportunities - meal delivery services
Easier ability to accept food stamps (cards now) without all the paper work/reporting which is too burdensome for small farmers.
Local food/healthy fast casual and fast food options in low-income neighborhoods Access to farm stands in low-income neighborhoods
Mobile markets to low-income communities
More convenient farm stands
SNAP benefits accepted at farmers markets and Farm Fresh Ventures
Transportation to farmers markets, classes in preparation of food (canning, cooking, buying in bulk like a co-op
Food preparation/ production support

Centralized marketing and distribution center for small-scale growers
Community/commercial kitchen, community gardens, etc.
Local canneries, pickling, and other food processing facilities.
Marketing, education, and promotions
Ones similar to NC 10% and farmer food share
Education; more advertising, mobile farmers markets that go into the communities
Not sure
Don't know
NA
None
Not sure
Not sure of any

9. **Please rank the following actions by assigning the most pressing action a rank of "1" and the least pressing a rank of "6."** (20 responses)



10. Please rank the following actions by assigning the most pressing action a rank of "1" and the least pressing a rank of "6." (19 responses)



11. Do you have any comments about questions 9 or 10? (3 responses)

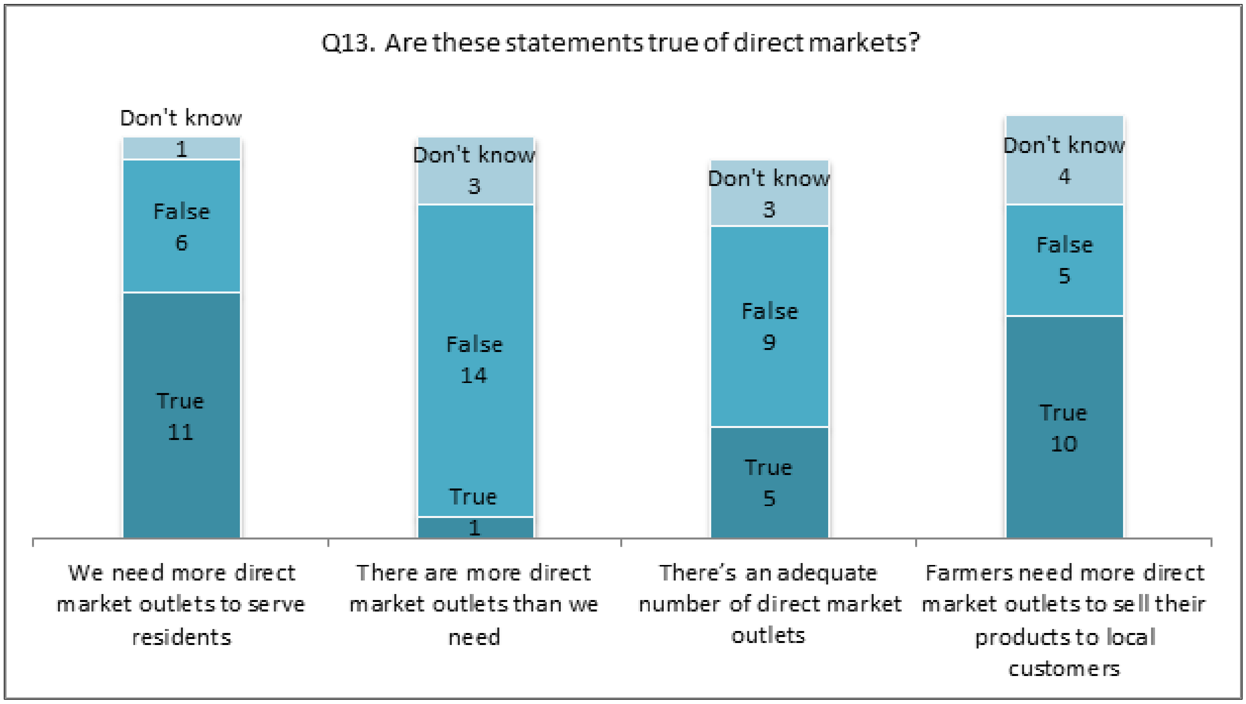
All responses
Farmers need to grow more nutrient dense food which will have less insect and disease longer shelf life taste better and result in better human health. Much of the presently available local food is lacking in these qualities. Children will eat tasty high quality fruits and vegetables. They will refuse to eat poor quality.
Local food events are great and really help with the education and outreach so I would see them as being connected. Also in #10 Developing infrastructure and local food processing could be combined. Both are important and are ongoing throughout the state but some are struggling we need to know why and what is the source of problems to help fix those issues and help them succeed.
Yes. Your questions are not specific enough to elicit valuable comments r.g. Infrastructure...what kind and specifically what purpose? Regional food councils or policies to accomplish what goals? Maybe that should be your first question.

12. To what degree do you feel that local residents are aware of the direct market outlets in your community/service area? (21 responses)

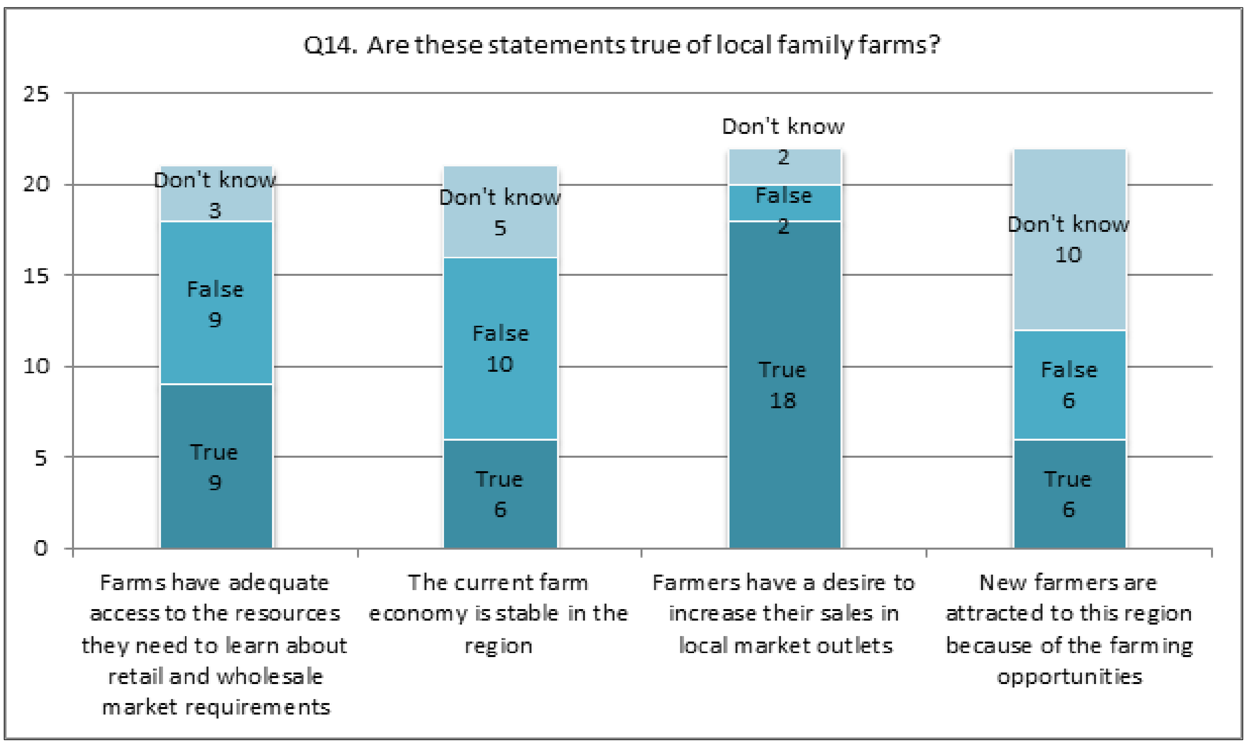
	Response percent
Not at all aware	0%
Somewhat aware	100%

Please explain (all responses)
Level of awareness
Been in the same area for years but a good deal of my community are unaware of us
Only aware by word of mouth
People interested in local food are aware. Those with little or no interest lack awareness.
Those that advertise or have stands near public roads are known.
Those who have an interest in locally grown foods are familiar with available outlets.
Need more promotion
Need flyers posted, community service advertisements in newspaper & TV
There needs to be more marketing/advertising to all local food sources.
We need to continue to educate the public, not everyone knows what a CSA is or how it works, we need to start targeting people outside of the local food community and educating them about these opportunities.
Some people find out by seeing these things and word-of-mouth, but there isn't a lot of marketing and advertising about them.
Other
New market with very limited funds
They are aware they exist but do not see the benefit of supporting them.

13. Please tell us if the following statements about DIRECT MARKETS (e.g., farmers market, roadside stand, etc.) are true or false for your community/service area: (19 responses)



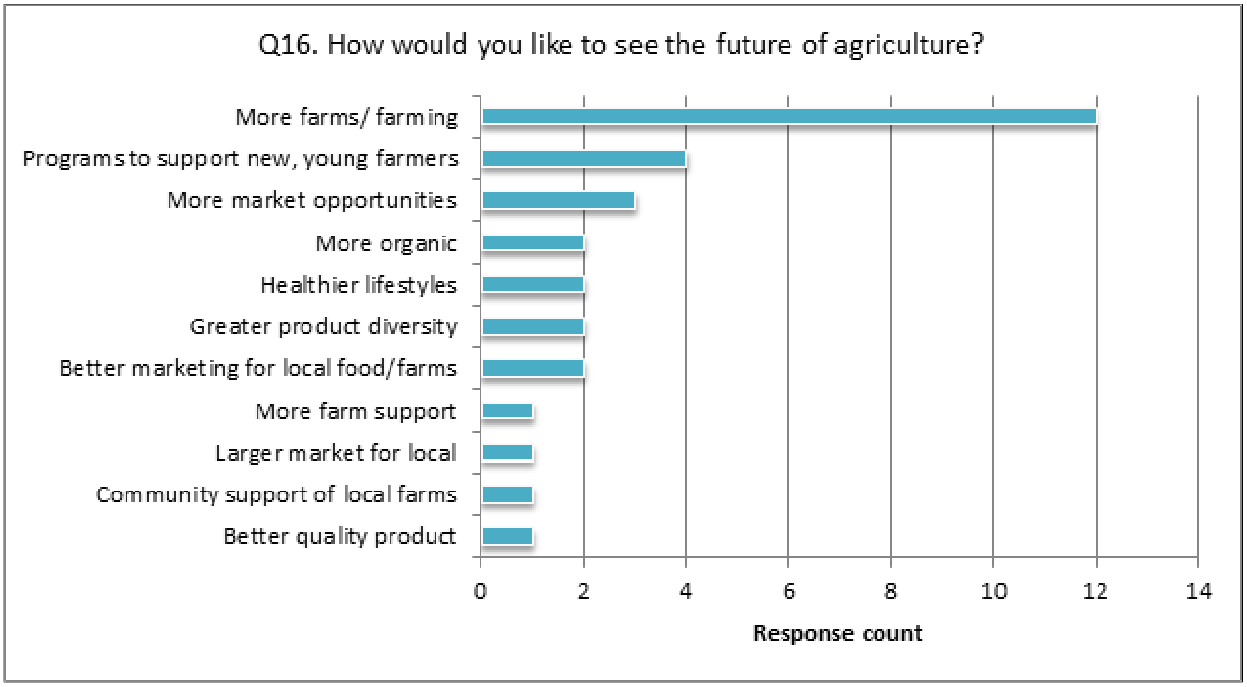
14. Please tell us if the following statements about LOCAL FAMILY FARMS are true or false for your community/service area: (22 responses)



15. How should non-agricultural development occur in the rural areas of your community/service area? (14 responses)

All responses
Controlled/regulated
Controlled to decrease sprawl and loss of farmland and green space
In a planned and organized way that protects open space for future agricultural needs.
In designated areas so as not to impair highly-productive farmland
In towns and cities and not Residential/Agriculture
Chester County government has little or no interest in farming or agriculture. For example, the Chamber of Commerce did not know the largest business in Chester is agricultural based. This county is totally focused on attracting a BMW or Google to the area while having a 64% illiteracy rate. Never going to happen but all resources are focused there instead of building up an existing business base.
It should embrace the local community, instead of trying to hinder it, it should help encourage agriculture. Example: Compton, CA development still allows agriculture.
Not at all; land should remain agricultural/residential...not developed for industry
Quit allowing municipalities to crowd out rural areas or otherwise make the farmland the nonconforming land use?
Slowly
With planning & encouragement
Free market forces/uncontrolled
By free market fundamentals
Don't know
Not sure (2 responses)
I'm not sure

16. How would you like to see the future (next 10-20 years) of agriculture in your community/service area: (19 responses)



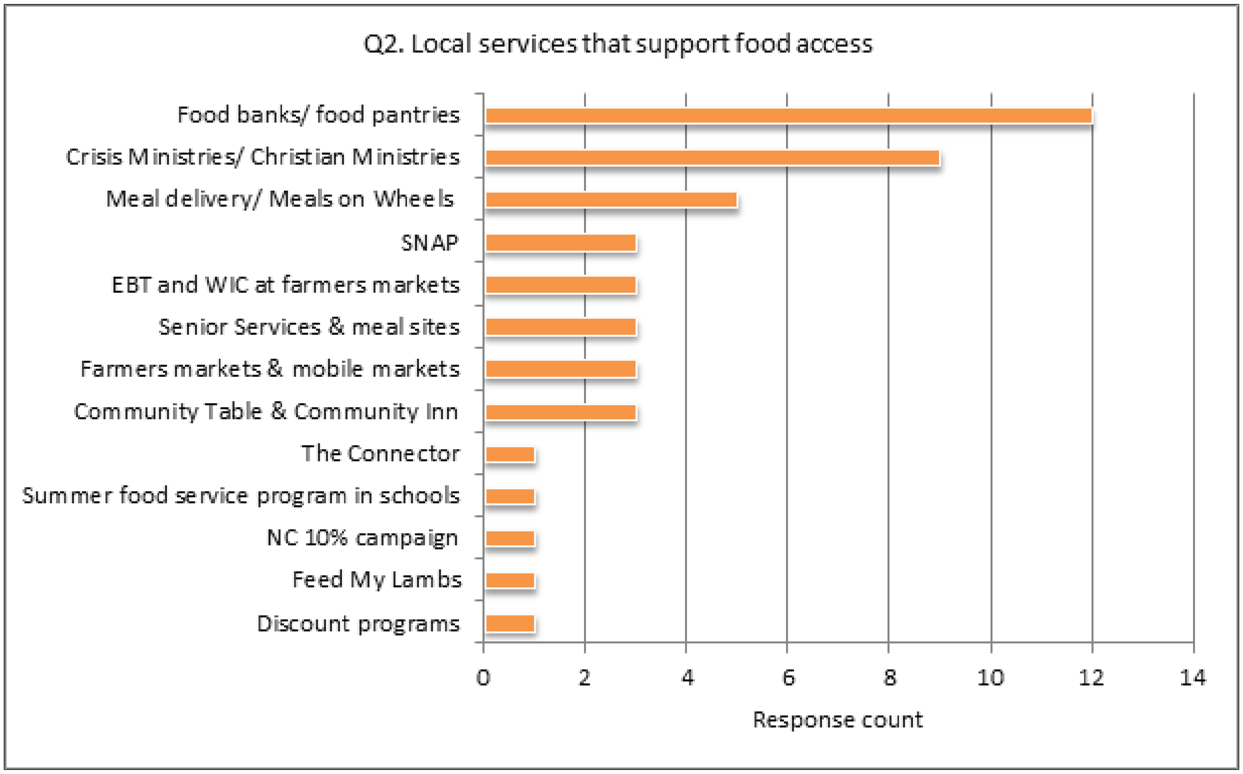
All responses
More
More farming
More farms (2 responses)
More farms including niche family farms
More farms Program to teach young people how to become farmers More organic production and subsidies to support such More opportunities for value added businesses
More farms, better marketing, communities supporting their local farms.
More farms, more farmers and more local support that recognizes the potential market of the Charlanta region.
More farms; more markets, healthier lifestyles
More local growers/ farmers. More small-scale growers
More organic vegetation, more berries grown

More young farmers raising a large variety of produce! More variety including things like wheat, grits, flour, etc.
Successful transition of existing farmland to the next generation of farmers, more diversified production, more large-scale production (to satisfy needs of large institutional buyers), more production targeted to local/regional consumption
Better
Improve the quality of food produced and available.
Programs to support new, young farmers
I would like to see local agriculture as a provider of jobs, a steward of our land, and a protector of our food security.
Would like Stanly County to become the mecca of farm products for the Charlotte area; both tourism and quality products. Organic meats, raw milk, fresh cheese. The name chosen to go on our label should be a promise of quality. Farmers would earn the right to have the label.
Other
I think Mecklenburg should have NC cooperative extension agents assigned to all schools, with active STEM programs and 4H programs teaching and encouraging kids to look into agriculture/horticulture futures.
I would like to see all subsidies cut off and the mega farmers fail. I would like to see a resurgence of sustainable small farms. I would like to see the general public educated on healthy living.
Unknown

REGIONAL FOOD SYSTEM SURVEY FOR HEALTHCARE AND SOCIAL SERVICES STAKEHOLDERS

1. I am involved with the local food system in my community as: (15 responses)

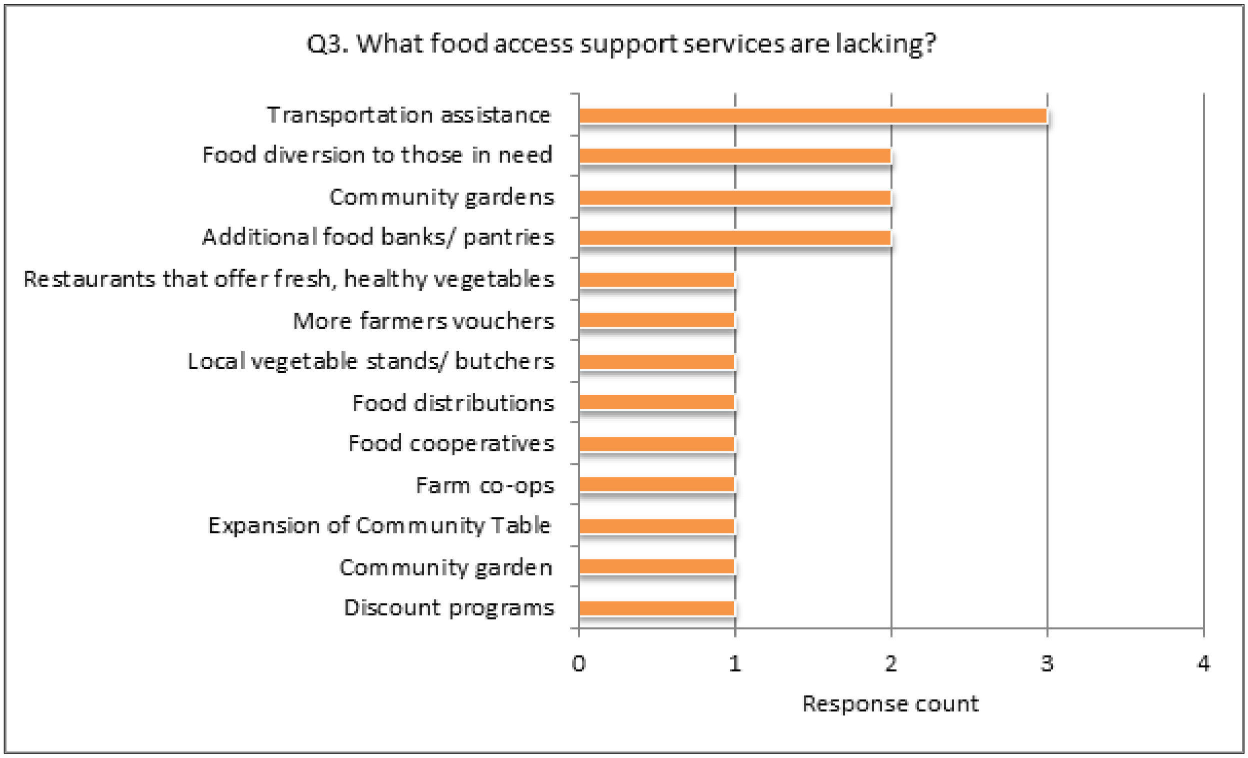
2. **What local programs, services, and businesses are you aware of that support food access for low-income individuals in your community?** (14 responses)



All responses
Food bank, etc.
Food bank Food Stamp Program RCATS Meals on Wheels 10% campaign
Food banks
Food banks discount program
Food pantry, farmers market @ health dept., meals on wheels
I know of a food bank service that seems to deliver quarterly, but not sure. We have a local food pantry, don't know if they have been able to obtain support from grocers/farmers for the low-income people they serve.
Meals on Wheels, Farmer's Market Vouchers, SNAP, food banks, area churches
Mobile food pantry, several food banks, daily lunches provided at the Community Table I & II
Second Harvest Food Bank, Anson Crisis Ministry, Feed My Lambs, etc.

SNAP at farmers markets, Meals on Wheels, Stanly Cty Christian Services Community Inn and Community Tables.
SNAP, food bank, the connector, farmers market,
Stanly Christian Ministry Local Churches
Stanly Community Christian Ministries (food bank, West Albemarle Christian Ministries (FB) West Albemarle Baptist Church, Albemarle, NC (FB), Providence Church, Locust, NC (FB), Stanly County Senior Center Meals on Wheels, Stanly Comm Christian Ministries Community Table, Senior Services Meal Sites
WIC farmer's market nutrition program, summer food service program in schools, mobile food markets at discounted rates

3. **What types of programs, services, or businesses do you think are lacking but should be investigated to support increased food access in your community?** (12 responses)

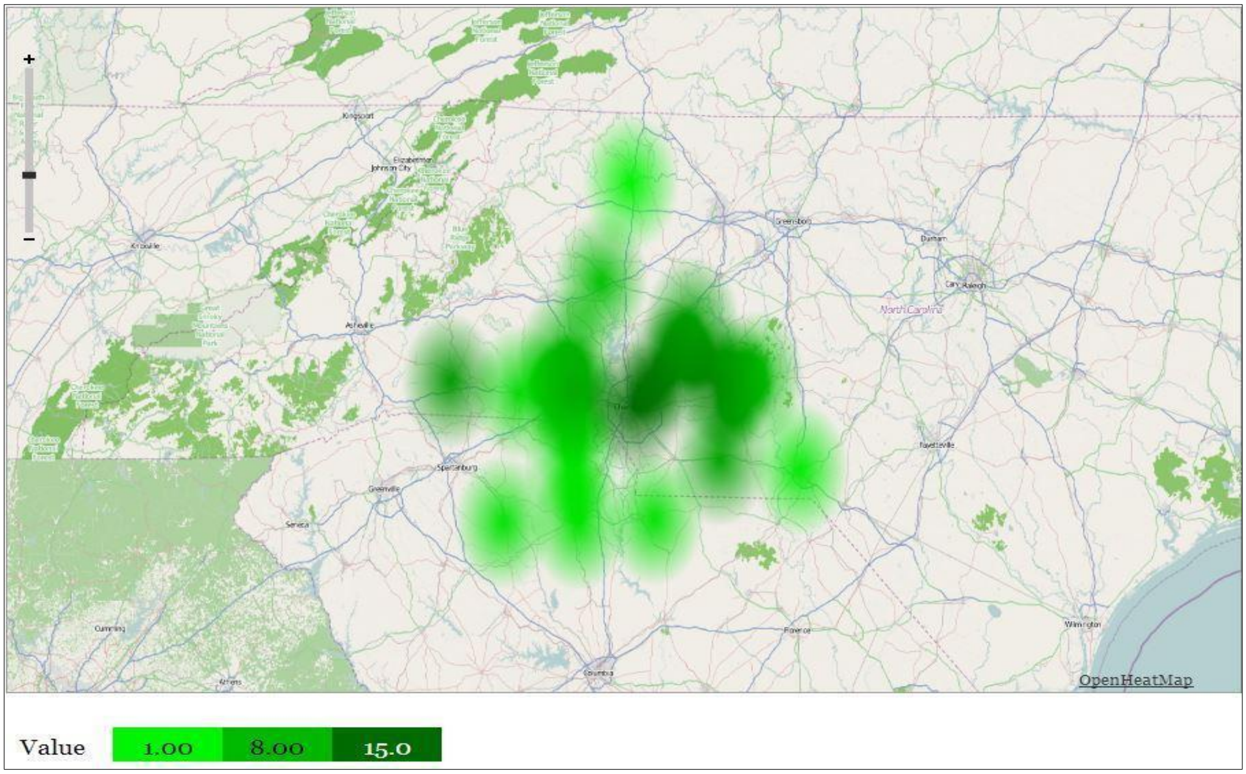


All responses
Community gardens
Expansion of Community Table into other areas besides Albemarle and Norwood, additional food banks or expansion of services and frequency for food banks, especially in Albemarle area when it services the majority of the Stanly County population, possible community garden projects that could be facilitated through agricultural extension, farm co-ops where individuals could work in exchange for food that they help plant and harvest, discount programs similar to angel food ministries where boxes of assigned goods could be purchased at reduced prices, restaurant excess foods that might be donated at the end of each day, transportation to community table and Senior meal sites
Food Cooperative
Have community gardens
I would like to see the local big grocers donate usable produce and "expired" items rather than throwing them out. From what I understand, most of this food is very edible and is simply going to waste in landfills. The food pantry we have is in the county seat and not everyone can get to it as there is no public transportation. I would like to see some nonprofits

or churches step up in other county communities to help provide food pantry services to their locals in need.
Local vegetable stands Butchers
N/A
One of our farmers markets is WIC & SNAP certified, so I can't think of anything we are lacking now.
Restaurants that offer fresh, healthy vegetables
Transportation, food distributions, more farmers vouchers
Unsure
We are rural, not urban cty and do not have the urban issue of food deserts as much. The one that is listed for our cty, in Albemarle, is in walking distance of the farmers market!....incorrectly listed.

4. **If a regional local food initiative were to be developed, what metropolitan areas, counties, or geographic regions do you think should be included?** (13 responses)

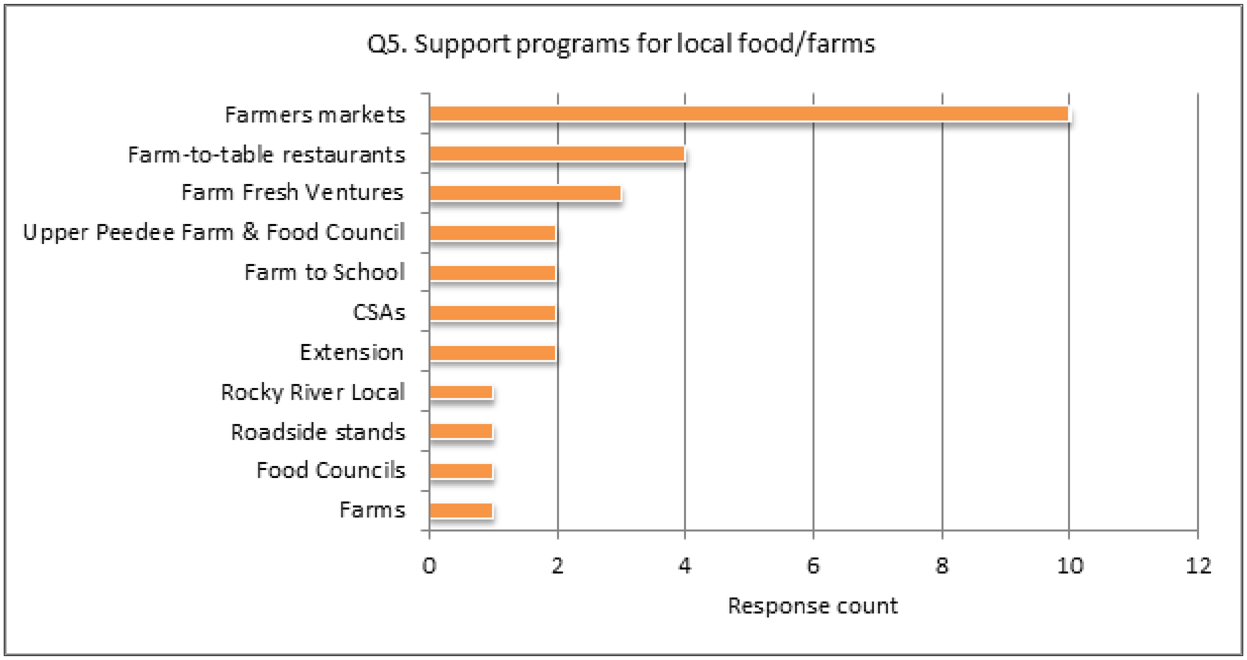
FIGURE 3. HEAT MAP SHOWING THE AREAS HEALTH AND ACCESS STAKEHOLDERS BELIEVE SHOULD BE INCLUDED IN A LOCAL FOOD INITIATIVE. THE DARKER THE AREA, THE LARGER THE NUMBER OF STAKEHOLDERS WHO THINK THAT AREA SHOULD BE INCLUDED.



All responses
All
All that want to participate
Anson County
Great Falls, Chester, Richburg, Fort Mill,
I live in Stanly County and a lot of our locals go to Mecklenburg and elsewhere to sell their goods. If the initiative is meant to invest local people who are only looking at price? then rural counties are a big priority. Metropolitan areas will definitely provide an audience of more customers in general and more with bigger expendable incomes as well.
Mecklenburg, Stanly, Union, Cabarrus, Rowan
Montgomery County

Our county has become part of a local foods council, so we are covered in that regard.
Spartanburg, Cherokee, Union, and York
Stanly, Montgomery, Anson, Union, Cabarrus, Davidson, Rowan, Moore
We already established the Upper PeeDee Farm & Food Council here in Anson, Stanly & Montgomery Counties. All 14 counties should have a council or be part of a sub-regional one.
York, Lancaster, Chester, Union, Cherokee Counties
York, Chester

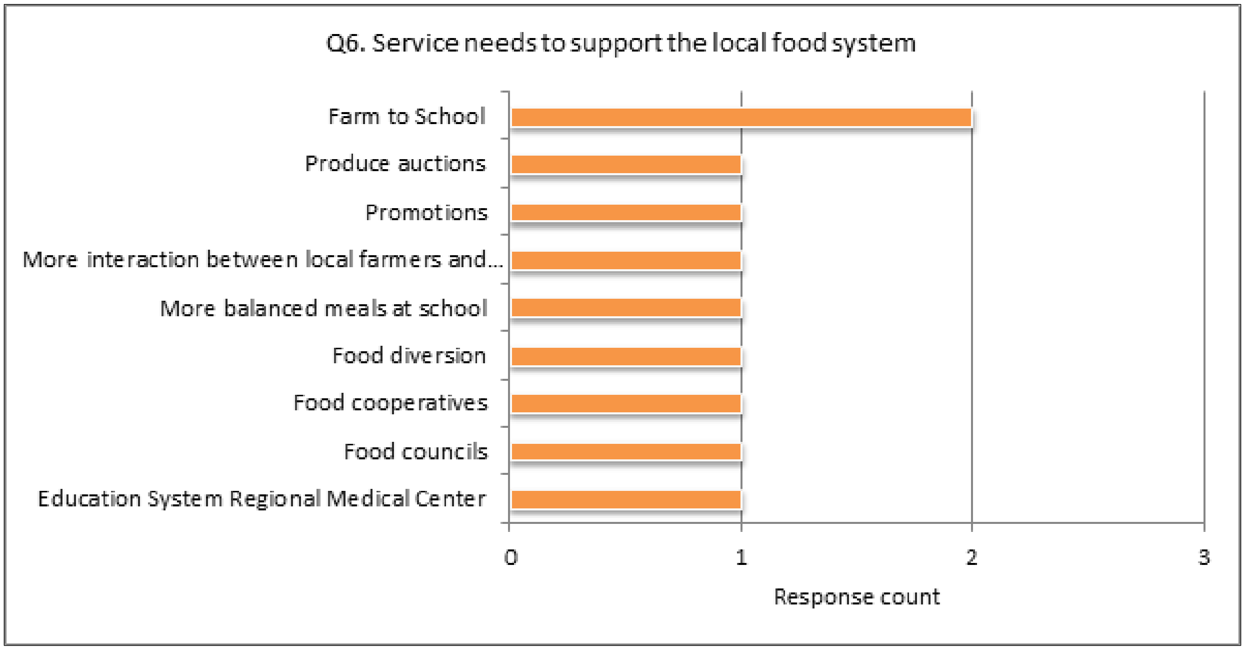
5. What programs, services, or businesses are you aware of that support local agriculture and locally grown food in your community? (14 responses)



All responses
Farm Fresh Ventures, Farmers market
Farmer Market Vouchers, School has program to feature local farmer's crops
Farmer’s markets, restaurants buying and supporting local farmers
Farmers Market, Clemson ext.
Farmers markets
I'm part of "Farm Fresh Ventures" that gives a weekly box of produce. It is wonderful our local GHA also does a CSA venture related to local produce. I am aware of several local (Stanly county) animal farms that are raising and supplying humanely raised and fed w/ no antibiotics, hormones, etc. Many of these I learned of via joining Farm Fresh Venture.
Local Farmers Market Upper Pee Dee Farm and Food Council
None
Small/part time farmers sell on farm, at stands, at farmers markets, Rocky River Local Foods is organizing for our region to promote locally grown food to more local retail, etc.; our Coop Extensions support Fresh Farm Ventures, a farmers coop in 5 counties;

Some local restaurants
Somewhat
Stanly County Farmers Market
three farmers markets, certain local restaurants
We have CSAs, limited farm-to-school programs, Upper Peedee Farm & Food Council, farmers markets, farm-to-table restaurants.

6. **What types of programs, services, or businesses do you think are lacking but should be investigated to support local agriculture and locally grown food?** (12 responses)



All responses
Education System Regional Medical Center
Farm & food councils in each cty/subregion; more ag programs in high schools &, in particular, com colleges. There is NO ag program in our 3 com colleges in our 3 cities.
Farm-to-daycare would be great!
Food Cooperatives
Grocers and Farmers donating produce or goods that are still great for consumption to food banks/pantries. Universities/colleges doing the same (NPR had a great show on this, is already happening in NC). Businesses -- grocers, restaurants, others contributing to a local compost vs. a landfill.
More balanced meals at school.
More interaction between local farmers and restaurants, schools, etc.
More publicity?
Not sure of any
Produce auctions (we have lots of auctioneers), any other service that would make foods

more accessible and affordable.
Unknown
Unsure

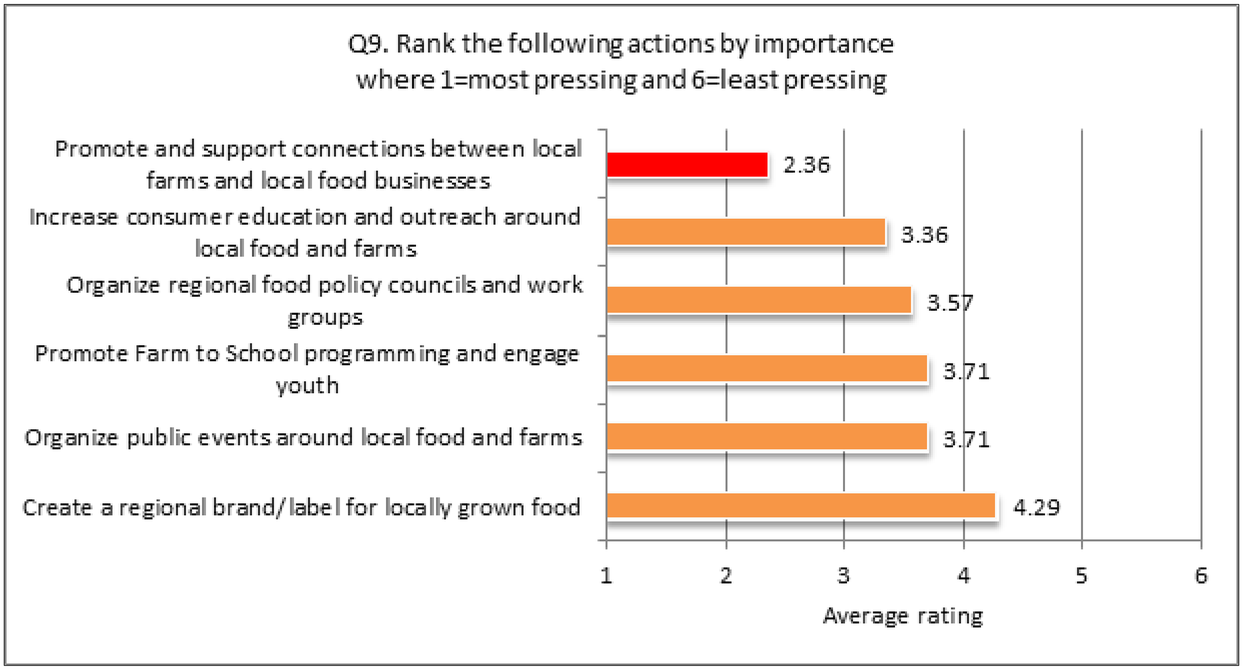
7. **What types of policies, rules, ordinances, or regulations are you aware of that SUPPORT local food in your community?** (10 responses)

All responses
I haven't looked into it. I fear that NC would prevent most of what I have said would be positive already.
The 3 cty commissions have endorsed the vision of UPFFC: a sustainable, locally-based, economically-viable, farm & food system. Coop Ext supports local foods in each cty.
The farmers markets limit products sold to those grown within a 100 mile radius of our county.
None (7 responses)

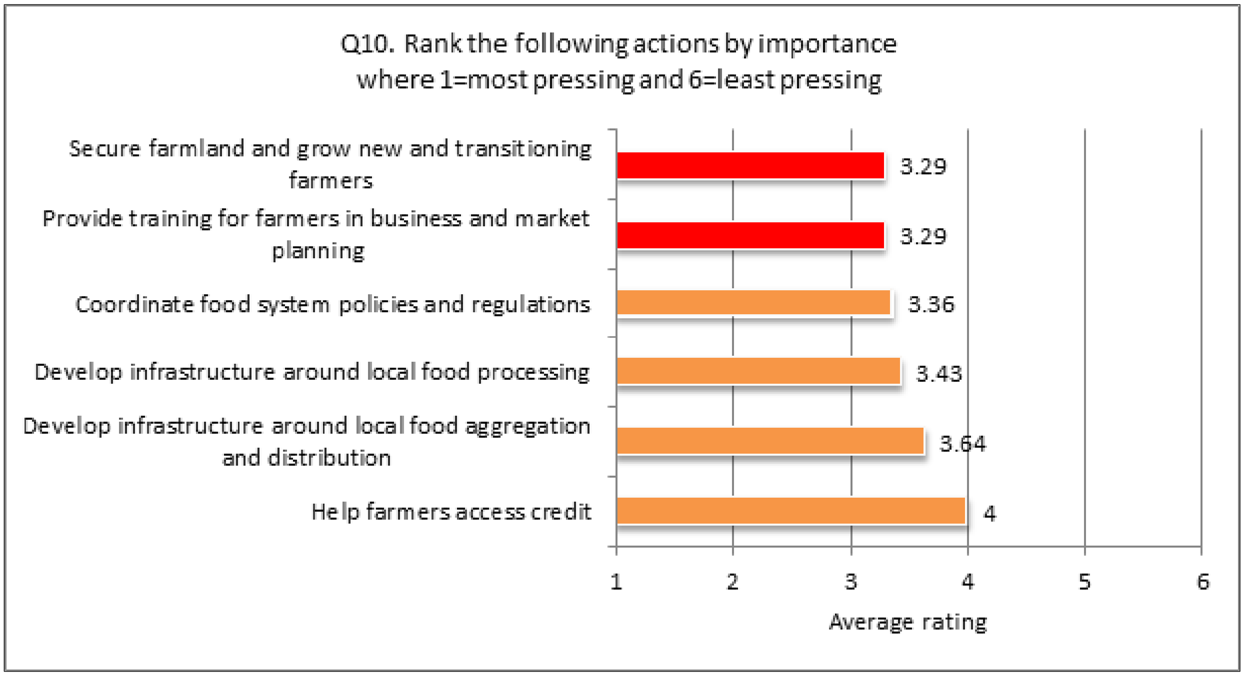
8. **What types of policies, rules, ordinances, or regulations are you aware of that are BARRIERS to local food and local farm activity in your community?** (11 responses)

All responses
All programs are based on income, and who is able to get to the services
Many of the USDA regulations are too difficult for small farmers to navigate to obtain various certifications. In addition, there is NO support from the federal government for small farms.
York County
Don't know (8 responses)

9. **Please rank the following actions by assigning the most pressing action a rank of "1" and the least pressing a rank of "6."** (1 responses)



10. **Please rank the following actions by assigning the most pressing action a rank of "1" and the least pressing a rank of "6."** (14 responses)



11. Do you have any comments or questions about questions 9 and 10? (2 responses)

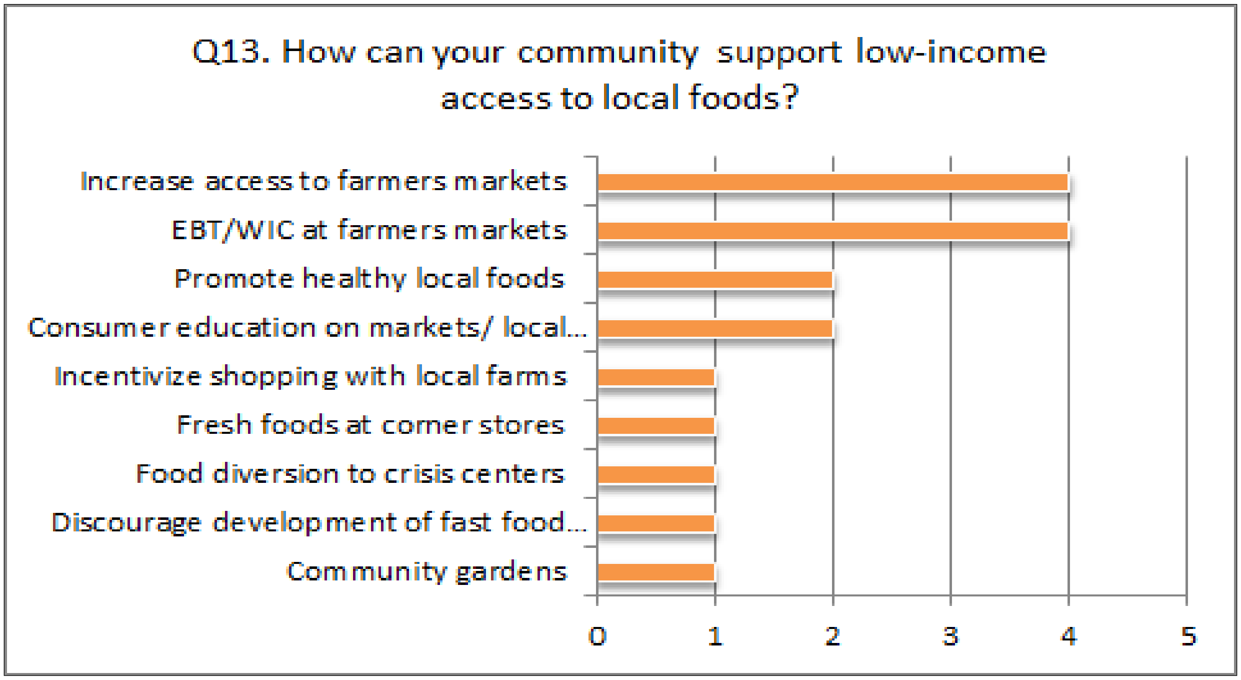
All responses
10 is hard. I drive around the state a lot due to my job. I see a lot of farmland for sale. I am not educated enough to know why that has happened in NC, so the order I put items in is only a guess. As a nonprofit healthcare provider, typically it is the regulations put in place to manage a small number of situations. That is just my guess
Some of these could be developed simultaneously. A regional farm & food network to provide the various councils support & ideas is needed. Preservation of farmland & open space should be high on region's priorities if we are to produce enough food for the region locally....human food, not just convention commodities. Community colleges could be big help in growing new & training local farmers in all areas.

12. Are there other actions you think your community should take to support local farms and local food? (12 responses)

All responses
Research and education
Complete a survey of local farmers to document their concerns. Then address those concerns.
Educate - educate - educate
Organize them
Promote local to residents and businesses
Promote locally grown foods to schools, restaurants and businesses
Local foods should be available and better marketed in retail outlets. Produce and some meat products are available at the local Farmers Market but this has 1 to 2 days of limited access. Retail markets with identified local items would be available more of the time.
Buy local
Individuals buying local
Simply continue to "vote" for local foods by buying FRESH, whole foods from our local farms as opposed to shopping at Walmart/Food Lion, etc.
Other
None (2 responses)

Farmer's market in a better location
Grocers, Farmers and restaurants should donate usable food to shelters and food banks vs. throwing it out.
We need regs to prevent industry and housing development from using our best farmlands. That development needs to go where infrastructure already exists so that we can preserve our farms and farmland.

13. What actions do you think your community should take to increase low-income resident access to seasonal and local fresh fruits and vegetables? (12 responses)



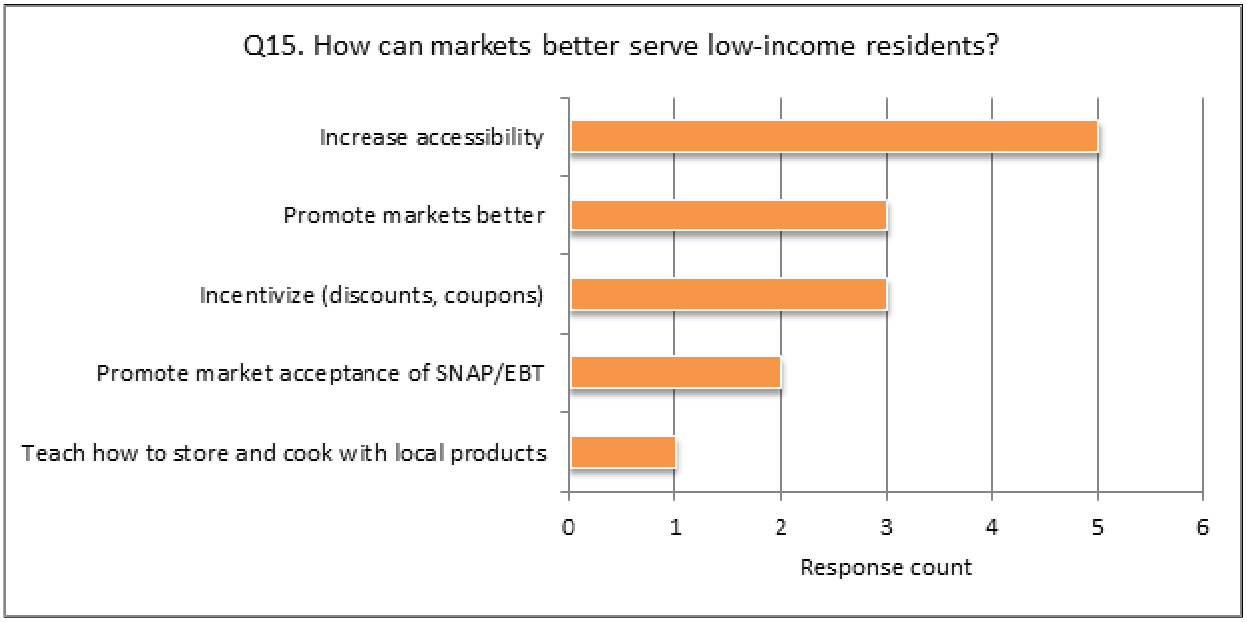
All responses
Establish more farmers markets as WIC/SNAP certified; increase the amount of fresh foods available in corner stores (which are extremely common in L-I areas); discourage the development of any additional fast food restaurants; incentivize shopping with local farms.
Farmers Market with EBT acceptance, More education via demonstrations, etc.
Grocers, farmers and restaurants should donate usable food to shelters and food banks vs. throwing it out.
I think there is good support now...access to farmer's markets in town is centralized in two locations...more days per week would be good, but farmers may not be able to spare the time. WIC farmer's market nutrition program gets low-income populations more comfortable

and familiar with farmer's markets.
Make it available
None
Offer SNAP at farmers markets, have community gardens
Promote and educate the public on what is available by local farmers
Public Health Depts. should not be afraid to deal with the obesity epidemic, to promote local & healthy foods. Perhaps workshops at local churches or other groups by public health or Coop Extension, others, could accomplish this.
Set up festivals around farming to include, professional chefs coming to the area and showing people what they could cook, hay rides, etc.
Take the fresh fruits and vegetables to their areas.
Transportation is difficult in rural areas. If local farmers could set up a market close to lower income housing, that would be helpful.

14. Please estimate the percentage of your clientele that are ESL (English as a Second Language) or do not speak English. (12 responses)

Average	***Minimum***	***Maximum***
10.1%	1%	30%

15. Do you have any ideas about how to increase your clients' patronage of local farmers markets? (13 responses)



All responses
Accessibility
Better location, longer hours
Continue to publicize SNAP benefits, to reach out to general public thru flyers, church groups, community groups, farm & food councils
coupons or discounts
EBT acceptance and advertising. Stanly County has moved the Farmer's Market on location with the Health Dept and the DSS. This allows access to a wider number of individuals
Education, education, education & incentives.
It is completely financial in this rural county with high unemployment. Period. I don't think anyone argues with local being preferable; people have to be able to afford to buy the products
Make more accessible.
No (2 responses)
Put them in easily accessible locations, teach how to use and store fresh produce

Saturate the area with materials promoting this process.
We offer vouchers for use at farmer's markets, let our clients know locations and hours...they miss out if they don't participate!

16. Do you have enough information and resources to encourage your clients to shop at local farmers markets? (14 responses)

Please explain
I can't tell clients on fixed incomes how purchasing locally grown vegetables/meats is better than going to the low cost grocery store.
I don't really personally know but think that the Public Health Dep, that works with our UPFFC, does have the resources.
Need more materials to explain this option including flyers that would be easy to understand.
Nutrition services branch of the Department of Health and Human Services provides us training and resources to share with our clients. We let them know hours of operation and locations of local farmers markets.
We're just beginning, so there is a lot of work to be done.

REGIONAL FOOD SYSTEM SURVEY FOR FOOD BUSINESSES AND RESTAURANTS

1. **How do you define your "type" of business, and in which county is your business located?** (3 responses)

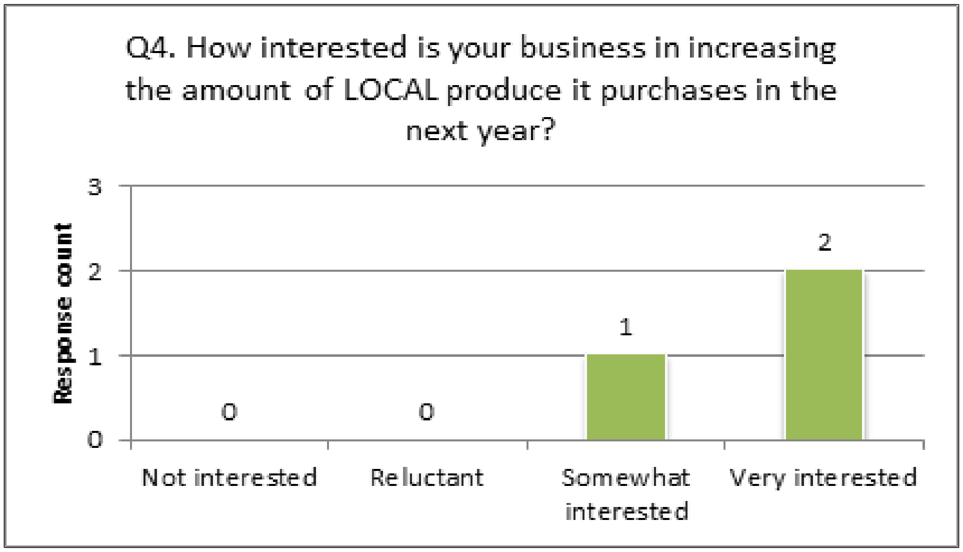
Type	*Location*
Restaurant	Mecklenburg
Public School	Montgomery
Facilitator	Rowan

2. **How does your business define "local" in the context of local food?** (3 responses)

All responses
100-mile radius
Within close proximity of our county
Rowan County and counties touching Rowan

3. **Have you purchased any food for your business in the past 12 months that was grown LOCALLY?** (3 responses)

4. **How interested is your business in increasing the amount of LOCAL produce it purchases in the next year?** (3 responses)



5. **If you purchase LOCALLY grown foods for your business, how do you typically get them? Check all that apply.** (1 responses)

Response
Directly from a farmer From a locally based wholesaler/distributor From a farmers market

6. **Where else would you be WILLING to purchase locally grown food (that you are not currently purchasing through). Check all that apply.** (1 responses)

Response
Directly from a farmer Directly from a farmer group/co-operative From a locally based wholesaler/distributor From a farmers market

7. Please indicate if you think the following are increasing, staying the same, or decreasing:

	Response
Customer demand for local products	Increasing
Ability to source locally grown farm products	Staying the same

8. To what degree do the following motivate you to purchase LOCALLY grown food for your business? (1 responses)

9. Are you able to purchase all of the LOCALLY grown food you desire for your business? (1 responses)

Response
No. Availability.

10. What are your biggest barriers to sourcing LOCALLY grown foods? Select your top 3. (1 responses)

Response
Need for standard packaging/product size Price Finding growers or local product supply

11. What types of support would be most helpful in overcoming these barriers? Check all that apply. (1 responses)

Response
Help finding local product More farms with food safety certifications (e.g. GAP) Assistance with developing purchasing policies that include local

12. What types of policies, rules, ordinances, or regulations are you aware of that SUPPORT local food in your community? (1 responses)

Response
?

13. What types of policies, rules, ordinances, or regulations are you aware of that are BARRIERS to local food and local farm activity in your community? (1 responses)

Response
?

APPENDIX F: COMMUNITY RESOURCES INVESTED IN THE REGIONAL FOOD SYSTEM

This report summarizes the results of focus groups conducted for the CONNECT Our Future project, a grant-funded project focused on building regional economic development within a 14-county region spanning North and South Carolina. The CONNECT Our Future project region is home to 2.5 million residents. A number of these residents are actively engaged in building the region's community food system, as either producers, business owners, or committed citizens working within nonprofit, educational, and government organizations. Their work represents resources currently invested in the CONNECT Our Future food system.

PURPOSE AND GOALS

The purpose of the focus groups was to complement the ASAP and CEFS assessment of the community resources invested in the region's food system and to lay the foundation for the action plan.

Our specific goals for the focus groups were as follows:

1. To engage residents working across the region's food system as participants in the focus groups.
2. To gather information from participants about different projects that are related to the community food system.
3. To examine these projects in the context of the community resources used to conduct them.
4. To deepen participants' understanding of the community food system concept, including the activities encompassed in the food system and the resources used to carry out those activities.
5. To create a common language related to food system activities, and to encourage participants to see the significance of current food system activity within the context of the entire community food system.

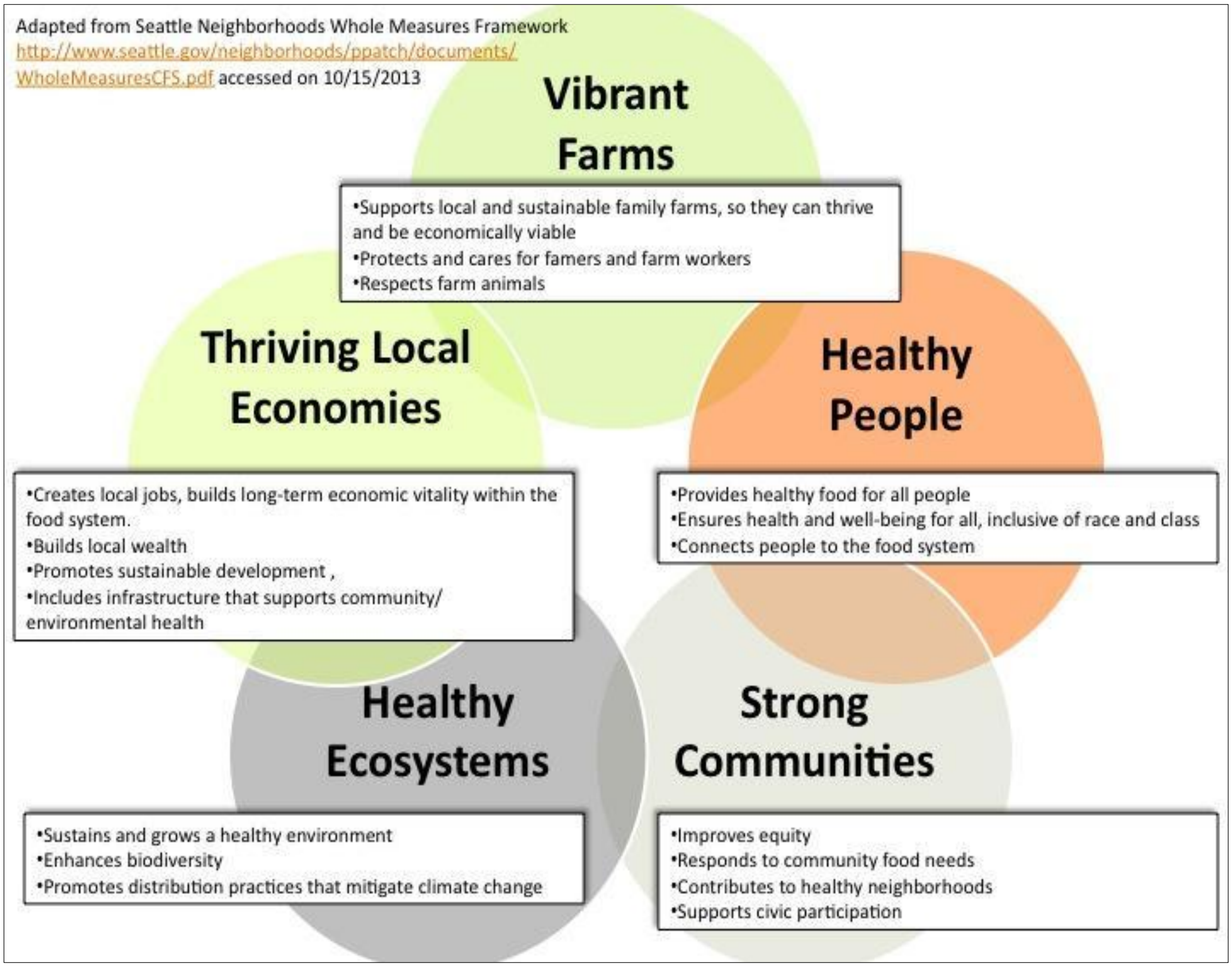
APPROACH

The focus groups were designed within the context of the long term goal of the CONNECT Our Future Food Systems Project: to develop a regional food system that supports locally-produced foods and enhanced food access as a vital, growing, and sustainable component of the regional economy, and to ensure sufficient rural and agricultural lands to support the local food production economy.

For the purposes of our work, we defined the CONNECT Our Future regional food system as a community food system, one that encompasses all the components of the food system – production; processing and aggregation; distribution; marketing and access; consumption; food waste recovery – but is place-specific and built upon a network of interconnected relationships. As a result, community food systems can have more transparency than a global food system.

We used the Whole Measures Framework, a planning tool for building strong community food systems, to identify five activity areas in the CONNECT Our Future community food system: Vibrant Farms, Healthy People, Thriving Local Economies, Healthy Ecosystems, and Strong Communities. Each activity area represents an outcome associated with a well-developed community food system, and together they represent all the activity included in this system. Figure 1 illustrates the five activity areas and the type of activities associated with each.

FIGURE 1: EXAMPLE OF COMMUNITY FOOD SYSTEM ACTIVITY ORGANIZED WITHIN THE WHOLE MEASURES FRAMEWORK[134]



We used the Whole Measures Framework to organize our efforts to recruit focus group participants. We used this tool to identify representatives from each of the five activity areas, because we wanted to gather information about current work being done across the entire community food system, including projects related to non-traditional food systems activity, such as thriving local economies, healthy ecosystems, and strong communities.

[134] Adapted from Seattle Neighborhoods Whole Measures Framework, "Whole Measures for Community Food Systems: Values-Based Planning and Evaluation," Center for Whole Communities, accessed December 9, 2013, http://www.seattle.gov/neighborhoods/ppatch/documents/WholeMeasuresCFS.pdf.

We intentionally designed the focus group activities to relate to the above-mentioned goals. (For more detail about specific activities, see the descriptions in the Activity Design section below.) While developing these activities, we examined research related to the types of resources that are invested in strong, vibrant communities. The Community Capitals Framework is a research-based framework that identifies seven types of capital in which communities can invest. Communities can use these categories to examine how current resources are being used, and to identify the potential for improvements.

We identified the Community Capitals Framework as a tool for organizing our efforts to examine the community resources invested in the CONNECT Our Future food system. We also used the framework to promote understanding of the community resources used to build community food systems. We chose this framework because the same seven community capitals that contribute to a vibrant community can be invested to build a vibrant community food system, and one approach to building community capitals is to look at food as a uniting, cross-cutting issue. In a recent webinar, experts at the UNC School of Government pointed to community food systems as a good way to develop each of the seven community capitals.[135] Figure 2 shows the seven types of community capital that can be invested into a community food system.

[135] Rick Morse, "Local Food and Local Government: What You Need to Know," webinar presentation given September 11, 2013.

FIGURE 2: COMMUNITY CAPITALS FRAMEWORK[136] AS APPLIED TO A COMMUNITY FOOD SYSTEM

A number of food systems assessments done across the Carolinas offer recommendations for ways to build community food systems. We wanted to incorporate both this research and the food systems assessment work performed for the CONNECT Food Systems Project into our focus group development. We also wanted to encourage participants to think in terms of results related to current food system activities. To do this we utilized the food systems assessment report prepared for the CONNECT project, as well as other reports and recommendations, to create a list of strategic objectives that contribute to a strong community food system. These strategic objectives were incorporated into focus group exercises.

METHODS

The focus group methodology was developed by CEFS, CFSA, ASAP and the CONNECT Food Systems Working Group. The design process involved examining research, defining common concepts, identifying tools to organize these concepts, and outlining activities. The

[136] Adapted from "Community Capitals Framework," Department of Sociology at Iowa State University, accessed December 13, 2013, http://www.soc.iastate.edu/staff/cflora/ncrcrd/capitals.html.

implementation process involved participant identification, recruitment, and focus group activity.

We scheduled 10 focus groups; two for each of the five activity areas. We held the meetings at five locations on weekdays between the hours of 8:30 am and 4:00 pm. Each meeting lasted two hours. Due to scheduling concerns, we combined two focus groups for one activity area and hosted a total of nine focus group meetings. Altogether, 42 people from the CONNECT Our Future region participated in these nine focus groups.

PARTICIPANT IDENTIFICATION

We recruited participants from the five activity areas we identified using the Whole Measures Framework: Vibrant Farms, Healthy People, Thriving Local Economies, Healthy Ecosystems and Strong Communities. ASAP, CEFS, CFSA, and the CONNECT Food Systems Working Group identified potential participants associated (either professionally or through community engagement) with the activities for each area through a combination of stakeholder interviews, professional networks, and word-of-mouth.

By identifying people connected with work in each of the five areas, we created a master list of potential participants that represented a cross-section of the region's community food system. The list targeted food system stakeholders across the region who are well connected to current food system projects and initiatives, either professionally or through community engagement. We chose these stakeholders because they serve as unofficial decision-makers within the community food system and, together, they could provide information about activities taking place across the food system.

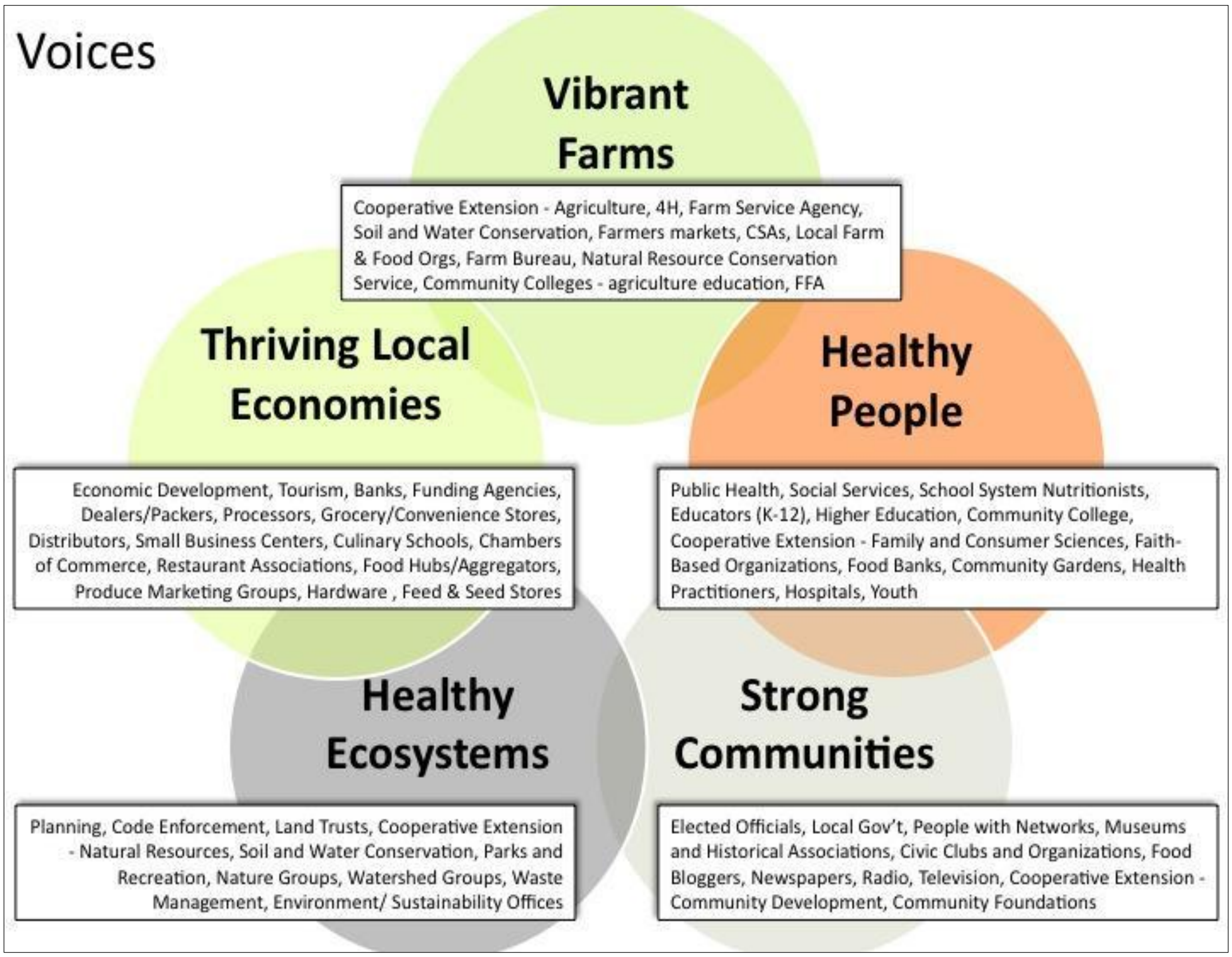
It is important to note that much of the foundational work done in the Carolinas to strengthen community food systems has historically focused on supporting vibrant farms and promoting citizens' health. Through our efforts to reach beyond the groups commonly associated with these two activity areas, we engaged citizens who are connected with the food system yet are not commonly included in local food system discussions.

RECRUITMENT

The participants were then categorized into the activity area (1 of the 5) that best fit with their professional or personal engagement with food system activity. A list of 12-14 people was selected for each focus group from this master list. Figure 3 shows the different types of people and groups that were matched with each of the five areas.

Participants were invited to the focus groups through a letter sent via email. Follow-up emails and phone calls were made to encourage and confirm attendance. It is important to note the role social capital played in the recruitment process. A number of people agreed to attend after direct communication with someone in their personal or professional network, or after they learned that someone from their professional network was involved in the project.

FIGURE 3: GROUPS RECRUITED FOR EACH OF THE FIVE ACTIVITY AREAS LISTED IN THE WHOLE MEASURES FRAMEWORK



FOCUS GROUP LOCATIONS

Ten focus groups were scheduled; two for each of the five areas. Participation was low for the first scheduled Strong Communities focus group; in order to foster a richer discussion, we combined the two groups recruited for this activity area. As a result, a total of nine focus groups were held.

We selected the meeting sites with the intention of distributing them around the region to encourage participation. The focus groups met in five different locations in the CONNECT Our Future Project region:

Mecklenburg Cooperative Extension Office, Charlotte, NC
Catawba Indian Nation Longhouse, Rock Hill, SC
York County Extension Office, York, SC
Cabarrus County Governmental Center, Concord, NC
Davidson Town Hall, Davidson, NC

ACTIVITY DESIGN

Each focus group included the following activities:

1. Introduction of CONNECT Our Future project and CONNECT Our Future Food Systems Project.
2. Overview of the community food system and five activity areas based on the Whole Measures Framework.
3. Participants were asked to list food system activities underway in the region.
4. Participants were asked to identify results related to these activities.
5. Overview of ASAP's food systems assessment activities and Community Capitals Framework.
6. Participants were asked to match results with strategic objectives and community capitals.
7. Wrap-up.

Below is a brief description of each activity.

COMMUNITY FOOD SYSTEM

After giving participants a brief description of both the CONNECT Our Future project and the CONNECT Our Future Food Systems Project, we provided an overview of a community food system based on the five activity areas taken from the Whole Measures Framework. We explained why they were invited and highlighted where they fit within the five activity areas.

LISTING FOOD SYSTEM ACTIVITIES

In our first exercise, we gathered information directly from participants about food system activities underway in the region. Each participant created a list of the existing food system projects and initiatives they were aware of as part of the exercise. Participants also listed projects planned for the next 12 months. Together, the nine focus groups revealed a cross-section of projects taking place across the CONNECT Our Future region.

IDENTIFYING RESULTS

In the second exercise, participants were asked to identify the expected results related to each activity they had previously listed. This exercise allowed us to take the first steps toward creating a common language related to food system activities. Results were defined as the expected outcome for an audience that would be affected by a particular project or activity. Participants were asked to write the results on sticky notes in the following format:

> Result for Audience in Location/Project or Activity
> One example:
> Tax benefits for Farmers in Lincoln County/Farmland Preservation Plan

OVERVIEW OF ASSESSMENT ACTIVITIES

We explained to participants that ASAP was conducting a variety of assessment activities as part of the CONNECT Our Future Food Systems project, including surveys, personal interviews, and a review of online data sources.

We explained that we had reviewed a summary of these activities, as well as a wide range of additional reports, recommendations, and strategies being used both in North Carolina and in other parts of the country, to create a list of strategic objectives that contribute to a strong community food system. A different group of strategic objectives was created for each of the following activity areas: Vibrant Farms, Healthy People, Thriving Local Economies, and Healthy Ecosystems. A combination of these strategic objectives was used for the Strong Communities focus group. Altogether, over 60 strategic objectives were used in the exercises for the nine focus groups.

COMMUNITY CAPITALS FRAMEWORK

We explained the Community Capitals Framework and described the seven types of community resources, or capitals, with examples of each. We also explained our reason for using this framework: the same seven community capitals that contribute to a vibrant community can be invested to build a vibrant community food system.

We also explained that we used the framework to organize the list of strategic objectives described above. We put up seven posters, one for each community capital, and taped the strategic objectives onto the appropriate poster. Each poster included three or four strategic objectives. Together these seven posters created a visual representation of how the strategic objectives, which were based on food system research, related to the types of resources needed to achieve them.

MATCHING RESULTS WITH COMMUNITY CAPITALS

In exercise three, we asked participants to match the results they identified in exercise two with the strategic objectives taped to the posters. They did this by placing the sticky notes (on which they had written results) on the strategic objective they thought it fit with best. If they could not match it with a specific strategic objective, they placed it on the community capital poster that it fit with best.

The exercise gave participants a clear visual representation of how the results they listed (which are based on current food system activities) relate to types of resources needed to build the region’s food system. After they finished with the exercise, we discussed the results. Conversations often focused on which strategic objectives and/or community capitals had the most and least sticky notes attached to them.

WRAP-UP

After a brief explanation of the plans to develop a network of food policy councils across the region, and the different types of work that food policy councils can do, we asked for their feedback about the exercise and overall process.

RESULTS

PARTICIPATION

Approximately 245 people were invited to participate through the methods described above. A total of 42 people attended the nine meetings. Participants represented the following counties:

Anson; Cabarrus; Chester, SC; Cleveland; Gaston; Lincoln; Mecklenburg; Rowan; Stanly; Union; York, SC

Participants included producers, business owners, consultants, nonprofit leaders, as well as employees from cooperative extension, county government, and health and planning departments. Below is partial list of the types of organizations they represented.

Catawba River District
Land Trust for the Carolinas
Communities in Schools
Lincoln County
Town of Davidson
Slow Food Charlotte
Cleveland County Chamber of Commerce
Catawba Indian Nation
Foster-Caviness
Cabarrus County
Second Harvest Food Bank
The American Heart Association
Uwharrie Bank

FOCUS GROUP ACTIVITY

THE COMMUNITY CAPITALS

We tallied the notes connected to each of the seven community capitals for all nine focus groups to examine the resources that are already being invested into food system activities.

We found that the majority of results that participants listed were matched with three community capitals: Human, Financial, and Social; they matched the most results with Human capital, followed by Financial and then Social. Built, Natural, and Cultural community capitals followed respectively, and Political community capital was matched with the least number of results. Again, participants matched results with the communities capitals in two ways: 1) they matched them with the strategic objectives connected to each community capital; and 2) they matched them with the community capital itself, based on the description of the types of resources included in each capital.

Below is a summary of the results connected to each community capital:

Human Community Capital

Involves resources relating to skills, education, health, and wellness.

Participant activities focused on skills for producers, awareness of food system activities, school education related to the food system; health, with a focus on access; and wellness/well-being.

Financial Community Capital

Involves resources related to investment, credit, charitable giving, and access to funding.

Participant activities focused on jobs, increasing farmer and food business profitability, miscellaneous financial tools, investment, credit, and farmers markets.

Social Community Capital

Involves resources related to relationships; networks, clubs, connections, and trust.

Participant activities focused on trust and community, formal networks, and information connections—those made through markets, between organizations, and between businesses.

Built Community Capital

Involves resources related to buildings and infrastructure, including schools, roads, and water and sewer systems.

Because the food system itself relies on built infrastructure, we organized these using the food system model. Participant activities focused on production, processing, marketing, and access/consumption.

Natural Community Capital

Involves resources related to the environment, natural beauty, and natural resources.

Participant activities focused on healthy soil and clean water, urban biodiversity, fossil fuel, and clean air.

Cultural Community Capital

Involves resources related to how relationships continue over time; ethnicity, generations, stories and traditions, spirituality, habits, and heritage.

Participant activities focused on traditions and values.

Political Community Capital

Involves resources related to power, inclusion, and voice.

Participant activities focused on power, inclusion, and voice.

OVERALL THEMES

Participants matched more of their results/activities with Human capital than any other by a large margin, and many of these results related to education and skills development for different groups. As a result, we identified education and skills development as key themes related to resources that are already invested in the region's food system. Participants matched the fewest results with Political capital, which highlights another theme: efforts need to be channeled into using these resources within the food system. As one participant said, "Political is empty, and that's a big problem; policy underlies a lot of the [food system] issues."

A large number of results listed by participants were related to both increasing access and operating farmers markets. Access-related results were connected with both Human capital, where they were associated with promoting health, and Built capital, where it was associated with consumption. Many of these programs target specific populations, such as school children, or involve services from a specific organization, such as the Second Harvest Food Bank.

Farmers markets were matched with Social capital as ways to foster different connections within the food system. They also were often connected with Financial capital, where participants matched the second highest number of results. After examining the results related to Financial capital, we saw farmers markets were commonly listed as a financial tool for use in the food system. Farmers markets have many benefits, but they do not always help to increase farmers' wealth. Plus, these markets rely on farmers, and as the assessment report mentions, the average age of farmers in the region in 2007 was 58. Therefore, even though the focus groups indicate a high level of food system activity related to Financial capital, there is opportunity for improvement to be made when incorporating financial resources in the food system.

The focus groups were designed to deepen participants' understanding of the community food system concept, both the different activities encompassed in the food system and the resources used to carry out those activities. We also wanted to encourage them to see the significance of current food system activity within the context of the entire community food system.

Many comments from participants were positive, indicating they saw value in examining the food system within the context of the seven community capitals. Examples of comments are listed below.

> *"The seven-sector model does work, it covers everything that is needed. Then you can get people to think about each sector. We've got ourselves a good process."*
>
> *"I liked breaking things down, to see what is happening and where fits. It is helpful to know who it impacts."*
>
> *"I can see economic, social, and political momentum is needed, there's where the work needs to be."*
>
> *"This is a big picture conversation that needed to happen."*
>
> *"It made me think we are all focused on our own work, maybe we need to stretch our thinking so we are addressing these other community capitals.*

CHALLENGES

Recruiting participants proved to be very difficult. Our list of targeted participants was well developed, and we successfully reached the people we targeted with recruitment materials, but the majority of the people we invited to attend the focus groups were unable to do so. The most common reason people mentioned was that it was difficult to take time out of the workday for travel to the meeting and attendance. It is also important to note that it was especially difficult to recruit participants from the private sector.

Another explanation is that participants don't identify with the 14-county CONNECT Our Future region, but with smaller regions instead. Citizens who are not committed to the vision of a 14-county region might be less motivated to take the time to travel outside their own regions, or communities, to attend focus group meetings.

The second challenge relates to the first. The amount of information we were able to gather about food system activities was limited by the number of people who attended the focus groups. It was also limited by the number of projects they were able to include on their activity list. Some participants mentioned that they would have been able to share information about additional food system activities with more time and advance notice.

Finally, some activities were listed more than once, and some focus group participants listed different results for the same activity. Participants also made connections between results and either strategic objectives or community capitals that were not easy to understand, or were different from the connections made by other participants working with the same result. In fact, many participants said they could have easily connected their results to more than one strategic objective or more than one community capital. These responses show that thinking about food system activities in terms of results is difficult, even for people familiar with these activities. They also highlight the interrelated nature of activity within food systems, and the number of interconnections present between the different activities and actors within a community food system.