

***Growing Local:
Expanding the Western North
Carolina Food and Farm Economy***

Prepared for
Appalachian Sustainable Agriculture Project



by

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Appalachian Sustainable Agriculture Project (ASAP) is a nonprofit organization that supports farmers and rural communities in the mountains of Western North Carolina (WNC) and the Southern Appalachians. ASAP's vision is to build a strong local food system in the region as a way to help sustain the local farm economy, preserve the rural character of the region, and support human and environmental health.

ASAP works to increase local consumption of locally-grown food and farm products through a Local Food Campaign built around public education and promotion, farmer training and support, research, and policy development. In response to the findings from this report ASAP introduced the *Appalachian Grown*[™] program in 2006 for certifying farms and farm products grown or raised in Southern Appalachian counties on family farms. ASAP's work has contributed to rising demand for local food and farm products by consumers, restaurants, retail food stores, businesses, and institutions within the region.

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Growing Local: Expanding the Western North Carolina Food and Farm Economy

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Executive Summary

This report is the culmination of a multi-year research project funded by the Southern Sustainable Agriculture Research and Education (SSARE) program, a division of the United States Department of Agriculture (USDA), whose goals include advancing knowledge about sustainable farming systems. This research explores: (1) what food and farm products are currently produced in the region; (2) how much of what is produced is also consumed in the region; (3) the potential for increasing local consumption of locally-produced food and farm products as a way to strengthen the regional farm economy; and (4) where investment of resources or other actions could eliminate barriers currently impeding the purchase of local food.

The report is based on the results from twenty separate surveys commissioned by ASAP and conducted between 2003 and 2007 as well as analysis of secondary data and published statistics. Stakeholders surveyed and interviewed include consumers, farmers' market shoppers and vendors, North Carolina Cooperative Extension (NCCE) agents, farms engaged in Community Supported Agriculture, college foodservice directors, summer camp directors, child nutrition directors in public school districts, hospital foodservice directors, tourism agencies, personnel in Latino centers, dairy farmers, grocery stores, restaurants, and nursery growers. The geographic area studied is the twenty-three Appalachian counties known as Western North Carolina (WNC).

The region has a long farming tradition and, despite national trends of farm loss and agricultural consolidation, farming remains vital to this region of the Southern Appalachian Mountains. In a snapshot, WNC is home to over 12,000 farms producing a wide variety of fruits and vegetables, meat and dairy products, and non-food crops like Christmas trees, tobacco, and nursery plants. Farms occupy a third of the privately owned land in the region and in 2002 the region's farms earned \$543 million in cash receipts. Tourism, the region's number one industry, is driven largely by the scenic farm landscapes and natural beauty of the region. Taken together, these facts demonstrate the significance of agriculture to the region's economy and to issues surrounding land-use planning.

The farm economy in WNC is in a period of transition, echoing a national trend in the decline in farms and acres of farmland. To some extent change is being driven by the end of the federal tobacco price support and supply control program. Other shifts are occurring simultaneously. In the decade between 1992 and 2002, the region experienced a 16 percent increase in fruit and vegetable crops and a 25 percent increase in acres devoted to non-food crops. Direct Sales – the USDA category used to describe transactions directly between farmers and consumers – have more than doubled and are expected to continue growing, bolstered by strong demand for locally-grown food. For the region of WNC, the research finds a desire by consumers and businesses for \$36.5 million for fresh fruits and vegetables and nearly \$452 million for all foods including meat, dairy, and processed products. In this context of transition, the potential for expanding local markets for local products is significant.

In this report, the emphasis on expanding local markets for local farm products is based on an underlying assumption that local markets can improve farm profitability. Profit potential lies

in price premiums tied to strong demand for local food as well as the possibility for reduced distribution and transportation costs associated with selling to local markets. In this sense, local markets can exert a positive influence on farm profitability as well as contribute to regional economic wealth by keeping dollars spent on food circulating in the local economy.

The research found strong demand for locally-grown food by WNC consumers and across all market segments surveyed. For the majority of consumers surveyed, local food represents a fresher, tastier option to foods produced in more distant regions, and the purchase of local food represents a way to support local farmers and local communities, protect the environment, and preserve the rural character of the region. Consumers reported spending a greater percentage of their total monthly food bill on locally-grown food in 2004 compared to 2000. At farmers' markets average per capita expenditures increased from 2003 to 2004 and the percentage of weekly shoppers spending more than \$20 at the markets increased from 24 percent in 2003 to 36 percent in 2004. More than three quarters of residents surveyed said that when local foods cost a little more, they are worth the extra cost. Significantly, 82 percent of WNC respondents indicated that they would buy more locally-produced food if it were labeled local.

Strong consumer demand for local food is evident by the growth in direct-marketing opportunities for local farmers and high interest in securing locally-grown foods by larger-scale businesses and institutions in the region. To better understand and quantify market demand and establish realistic goals for sourcing local food, this study measured the level of desire to source local food by specific market segments. . It also factors in climate conditions and the seasonality of local food production.

Demand for locally-grown food is described in terms of spending: current spending, desired spending, and maximum spending. Dollar values reflect retail spending, not prices received by farmers.

Current spending refers to the amount of locally-grown produce that is currently being purchased by buyers in the region. Desired spending and maximum spending both represent the potential for locally-grown food in the region. **Desired spending** refers to the amount of locally-grown food interested buyers would purchase if they were able to get as much as they wanted. Achieving this level of spending would involve altering local food infrastructure and distribution systems so that local food could more easily reach different types of markets. **Maximum spending** represents the highest possible spending on locally-grown food by consumers and categories of large-scale buyers examined in this report. These spending levels imply infrastructure improvements plus changes in tastes and preferences so that more buyers in each category have high interest in obtaining locally-grown food.

These categories of spending are further broken down to distinguish between (1) demand for only fresh fruits and vegetables and (2) demand for all foods (i.e., fresh produce plus meat, dairy, and processed foods). This distinction is necessary when describing demand for local food in this region because more locally-grown produce is currently consumed locally than any other type of food. Produce also has less infrastructural requirements and therefore local produce sales hold better potential for increases in the short term than other farm products.

- **Current spending of locally-grown produce: \$13.9 million.**
- **Current spending of all categories of food: \$14.5 million.** This estimate is likely low due to the difficulty of distinguishing local sales of locally produced milk.

- **Desired spending of locally-grown produce: \$36.5 million.**
- **Desired spending of all categories of food: \$451.9 million.**

- **Maximum spending of locally-grown produce: \$49.9 million.**
- **Maximum spending of all categories of food: \$654.2 million.**

The greatest immediate opportunities in terms of market size lie in the retail grocery market. Nearly 60 percent of the \$2.2 billion worth of food consumed by the region's residents is purchased in retail food stores for home consumption, and retailers in the region are increasingly seeking ways to expand their local offerings. Restaurants also represent a promising market for locally-grown food with freshness and quality driving high demand for local ingredients. Beyond food stores and restaurants, the study finds high interest in local food by institutions that serve and sell food to the region's consumers, and summer camps.

Despite strong, measured demand for local food and farm products only a fraction of all food that is consumed locally is currently produced locally, probably less than one percent. This fact is true even for foods that can and are being produced by the region's farms. On the surface this represents an opportunity for local growers to expand production. More accurately, the disparity between demand for and supply of locally-grown food is complicated by the processes involved in moving food from farm to market, processing needs, and state, federal, and local policies that do not support local farms. Expanding local consumption of local farm products will require restaurants, food stores, and other businesses and institutions that serve or sell food to modify food procurement and distribution systems.

To some extent, food retailers in the region are currently altering their practices to accommodate more local food. Additionally, regionally-based systems of distribution—wholesale distributors, packers, farmer cooperatives, systems of backhauling—exist in the region that have the potential to help local farmers gain access to larger-scale markets. The region also has significant pieces of processing infrastructure including facilities for large-scale milk processing and distribution. With increasing demand for local food, these systems and pieces of infrastructure are potential points of intervention that, with further development, could create space for local farmers in a tightly integrated market.

The research confirms that there are areas where it is appropriate to expand what is currently being done and other areas where new initiatives and additional research are needed. Recommendations detailed in this report include:

- Improve outreach efforts for larger scale markets
- Improve the labeling of local food
- Provide information and support to growers
- Advocate for policies that favor local food distribution and sale

- Help maintain working farmland in the region
- Identify points of intervention in food distribution and infrastructure systems
- Expand public education and awareness about local food
- Expand the Local Food Campaign more fully throughout the region
- Integrate efforts to promote agriculture with efforts to promote tourism
- Expand direct market channels
- Strengthen partnerships among regional organizations

Within these recommendations there are many action steps that can be taken. These recommendations are part of a broad agenda for expanding local markets for local farm products in the region. Achieving a strong and successful local food system is one way to improve the profitability of WNC farms and help maintain working farmland in the region.

Introduction

This report is the result of a multi-year research project funded by the Southern Sustainable Agriculture Research and Education (SSARE) program, a division of the USDA whose goals include advancing knowledge about sustainable farming systems. The purpose of the research has been to: (1) explore what food and farm products are currently produced in the region; (2) examine how much of what is produced is also consumed in the region; (3) consider the potential for increasing local consumption of locally-produced food and farm products as a way to strengthen the regional farm economy; and (4) identify points where investment of resources or other actions could eliminate barriers currently impeding the purchase of local food. This report presents a wide-ranging collection of information on the region's food and farm economy, which can form the basis for future efforts to expand local markets for local farm products.

Research findings are based on results from twenty separate surveys conducted between 2003 and 2006 as well as analysis of secondary data. Stakeholders surveyed and interviewed include consumers, farmers' market shoppers and vendors, North Carolina Cooperative Extension (NCCE) agents, farms engaged in Community Supported Agriculture, college foodservice directors, summer camp directors, child nutrition directors in public school districts, hospital foodservice directors, tourism agencies, personnel in Latino centers, dairy farmers, grocery stores, restaurants, and nursery growers. The geographic area studied is the twenty-three Appalachian counties known as Western North Carolina (WNC).

Underlying the research is the assumption that local markets can improve farm profitability. The profit potential lies in price premiums tied to strong demand for local food as well as the possibility for reduced distribution and transportation costs associated with selling to local markets. The data collected for this report are used to quantify demand and offer a sense of the potential for local consumption of local farm products in the region as well as to evaluate the effectiveness of ASAP's efforts to rebuild the local food system. While the report relies on many assumptions and complex formulas to generate estimates of current and potential demand, the intent is to show, in numbers, the relative importance of various market channels and help identify places where an investment of resources can foster meaningful change in the local food and farm economy.

Additionally, this research recognizes that there are differences in the price of food at different points in the transaction chain from farm to table. *Retail value* indicates the amount that consumers pay for food and *wholesale value* is what businesses or organizations would pay for the food. A third value, *farm value*, reflects the amount that farmers receive for the food they sell. Farm value is often referred to as a percentage of the retail price of food in the report and careful attention is paid to naming the value being represented so that comparisons can be made across categories and a single figure (or range) can be calculated to describe the local food system in dollars.

While this project is large and covers many topics relevant to expanding the farming economy of WNC, food is the primary focus. Other crops, while significant to WNC's farming economy (e.g., nursery crops and Christmas trees), are not included in the tables or figures describing local market potential for local farm products. How much consumers and

businesses in the region value locally-produced items that are not food (i.e., would be willing to pay more for them) and how interested producers of those crops are in shifting to local markets is uncertain. To help answer these questions, additional research is needed. The wine industry is another relatively large and growing sector of the region's agricultural economy that is only briefly covered.

These omissions are beyond the scope of this research and reflect a concentration on fresh produce. The produce focus is based on growth in sales of fresh fruits and vegetables through direct marketing channels over the course of ASAP's Local Food Campaign. A major purpose of this study has been to move beyond the direct marketing focus and quantify the potential in higher volume markets. Accordingly, the report includes a bias towards larger-scale markets. The infrastructural and distribution issues associated with the expansion of larger-scale markets are emphasized, for example, more than infrastructure issues involved in supporting the development of new or expanded Community Supported Agriculture programs (where consumers buy a share of a farm's output before the season starts) or on-farm retail.

Section 1 of the report provides a comprehensive look at the food and farm economy of WNC using data from the United States Department of Agriculture (USDA), the North Carolina Department of Agriculture and Consumer Services (NCDA&CS), and other places. The Census of Agriculture conducted by the USDA every five years is the primary data source. This section also examines history and trends, which influence farm production in the region, and explores the influence of local markets on farm profitability.

Section 2 addresses consumer demand for locally-grown food in the region. Using a combination of market surveys and data from secondary sources, demand is described for both consumer markets and larger-scale markets. Overall, strong consumer demand for local food is evident in high demand by the growth in direct-marketing opportunities for local farmers and high interest in securing locally-grown foods by larger-scale businesses and institutions in the region.

The information about market demand in Section 2 focuses mainly on locally-grown produce and excludes meat, eggs, dairy products, and other processed farm products. This distinction reflects the reality that the current local food system in WNC is largely made up of fruit and vegetable sales to consumers and organizations in the region. In the short-term, fruits and vegetables hold the greatest potential for being made available to local markets due to the reduced infrastructure requirements for produce compared to livestock, poultry, and animal products.

In **Section 3** the focus of the report is broadened from produce to include meat, eggs, dairy, and other processed farm products. The supply of various types of food produced in the region is assessed along with some discussion about what it takes to move each type of product from farm to market.

Section 4 describes barriers or challenges to a strong local food system in WNC. This section draws on additional information gathered from tourism and North Carolina

Cooperative Extension professionals as well as representatives from nonprofit and academic organizations working to strengthen the local food system in the broader southern Appalachian region.

Section 5 provides a set of recommendations for bridging the gap between supply and demand of local food and farm products. The recommendations represent action steps that can be taken to build on the region's strengths and resources and overcome many of the identified barriers and challenges. This section acknowledges that linking local growers with local markets involves a complex interplay of demand, supply, and infrastructure.

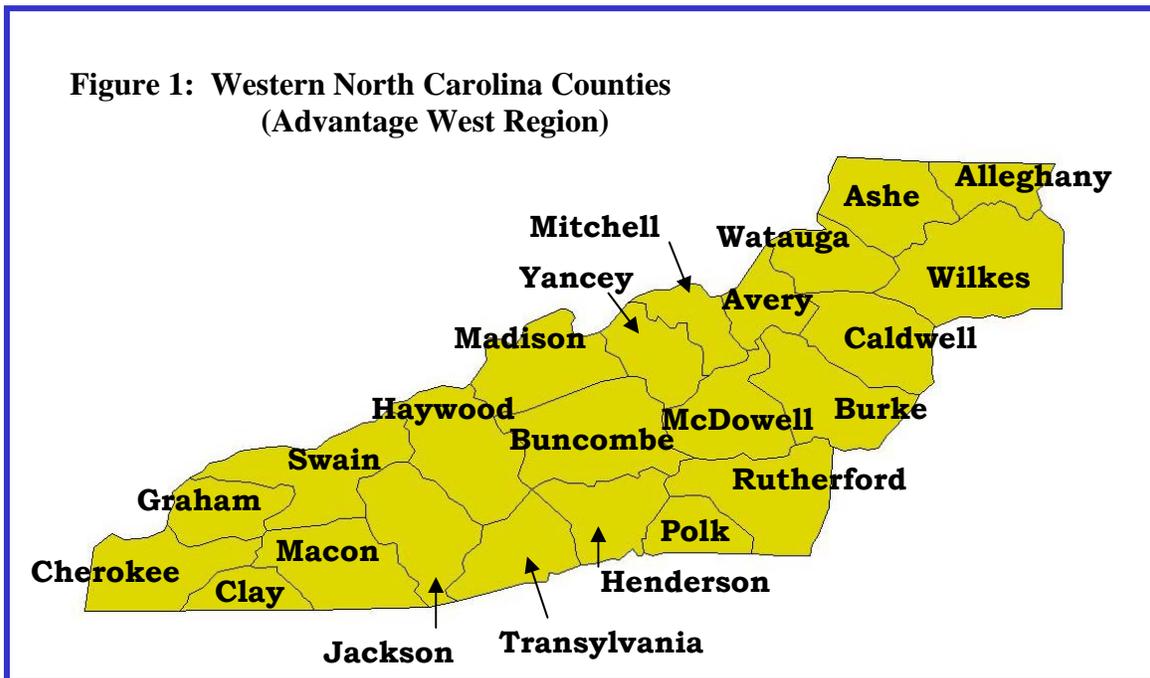
Further details about the research are available in several Appendices. Appendix A includes twenty individual reports based on surveys and other research conducted between 2003 and 2007. Appendix B includes six case studies, which are designed to illustrate issues discussed in the report. Appendix C includes a review of the work ASAP has done in five years of operating its Local Food Campaign. Appendix D briefly describes related research in the region.

SECTION 1: The Western North Carolina Food and Farm Economy

Agriculture is one of the largest industries in North Carolina. The state ranks 8th nationally in farm income with \$7 billion of farm products marketed in 2002, the year of the most recent USDA Census of Agriculture.¹ A total of 53,390 farms were operating in the state in 2002 on 9.1 million acres. The average farm size in North Carolina in 2002 was 170 acres, with the state's largest farms concentrated in the eastern part of the state.

North Carolina is organized by the state into seven regional partnerships for economic development purposes. Western North Carolina is defined as the 23 counties included in the Advantage West region of the state (see map). Besides the Advantage West region, there is the Piedmont Triad region, the Charlotte region, the Research Triangle region, the Eastern region, the Northeast region, and the Southeast region.

The Advantage West region has approximately 1 million residents, including more than 13,000 farmers. Rapid population growth in the 1990s marked a change from the previous decade when much of rural NC grew slowly or not at all. The population in the Advantage West region grew by 17% from 1990 to 2000, mostly due to in-migration. The fastest growing ethnic group was Hispanics, which increased from 5,342 to 29,106 over the decade. Still, Hispanics represent only a small portion of the region's total population at just fewer than 3%.²



¹ The USDA Agricultural Census is conducted every five years. The most recently released data is from 2002. Throughout this report, data is from 2002 unless otherwise indicated.

² Demographic information in this paragraph comes from a summary of census data provided by the NC Rural Center (www.ncruralcenter.org)

Twenty-two of the twenty-three counties in WNC are classified as rural. Per capita income was just over \$18,000 in the Advantage West region in 2000, compared to a high of around \$23,000 in the Research Triangle region and a low of \$16,000 in the Northeast region. Despite improvements since the 1960s and 1970s, poverty remains high in rural WNC.

The region is home to 12,212 farms, close to one quarter of North Carolina's total. Small farms predominate in the region, with more than half of all farms operating on fewer than 50 acres. Average farm size in WNC is 85 acres, approximately half the state average and one quarter of the national average farm size. Farming is nevertheless a substantial contributor to the economy, with \$543 million in agricultural receipts reported in the region in 2002.

Chapter 1: A Brief History of Farming in the Region³

Farming in WNC has never been easy. In a land of fertile and loamy river valleys and craggy inhospitable highlands, the region's farmers have always been faced with unique challenges and blessings related to topography. Historically, just as today, farming in the mountains required balancing the limits of the land with the availability and demands of the market.

The first European immigrants to the region brought traditional farming methods from their homelands. The largest group of immigrant settlers to the area, the Scotch-Irish, began arriving in large numbers in the valleys and coves near the French Broad River after the Revolutionary War. They brought a tradition of simple farming tools, independence, and an ability to adapt to challenging conditions. Consequently, they adjusted well to the isolation and dependence on subsistence farming required during the earliest years of European settlement.

The typical homestead of settlers of the late 18th and early 19th centuries consisted of mixed farming of crops and livestock. The crops, primarily Indian corn, were fenced and the livestock left to forage in the woods and fields. Transportation was extremely limited across most of the mountain region, meaning that the majority of farmers grew only what they needed for their own families. Most mountain crop fields were small, tucked into the narrow valleys between mountain ridges. The rich mast of the Appalachian forests made it possible for livestock to be raised for little cost on public lands. As roads gradually opened the region to outside markets, the majority of the mountain region remained largely isolated from the larger state and national economy.

The French Broad River served as a natural route for trade that farmers of the region used to carry their goods to market. In 1827, the creation of the Buncombe Turnpike linked the region to national livestock markets with dramatic results. Mountain farmers responded by driving ever more livestock and fowl to market on the new turnpike along the French Broad River. Upwards of 175,000 hogs were driven along the road yearly during this period as well as numerous mules, ducks, turkeys, and cattle. The farmer was able to turn the bulky corn crop, still the most prevalent crop, into higher value meats that could be walked to market along the turnpike road. Whiskey also added value to the corn while reducing its bulk so that one horse could carry the equivalent of eight bushels of corn to market in a liquid form.

In the period leading up to the Civil War, most of the farms along the river continued to survive through a mixture of subsistence and market farming. The coming of the Civil War in the late 1800s devastated the South economically and diminished the number of farmers and farms in the mountains. The end of the war also saw the end of the great drives along the

³ Sources for this section include:

- Ager, John Curtis. *We Plow God's Fields: The Life of James G. K. McClure*. 1991. Appalachian Consortium Press: Boone, NC.
- Blethen, T. *From Ulster to Carolina: The Migration of the Scotch-Irish to Southwestern North Carolina*. 1983. Western Carolina University Mountain Heritage Center: Cullowhee, NC.
- Dykeman, W. *The French Broad*. 1955. Holt, Rinehart & Winston: Austin, TX.

Buncombe Turnpike. New railroads brought livestock from the American west to supply markets the mountain farmers had depended on, helping to end the era of the great drives.

Huge numbers of small-scale farmers turned their land to cultivation of Bright Leaf tobacco after the Civil War. With this valuable crop, which grew well in the mountain soil and could be stored without loss of quality until the farmers could transport it to market, land values increased and the region acquired a reputation for excellent tobacco. But by the end of the century, tastes for tobacco changed and the harsh Bright Leaf no longer met the desires of the market. Production declined and once again the resilient farmer returned to subsistence farming and growing other crops that kept small farms in production while tobacco markets were unavailable. By 1923 Burley tobacco made tobacco growing profitable again and its production would continue to strongly influence the regional economy for most of the rest of the century.

By the 1920s the forests of the Southern Appalachian region were virtually gone. Whole mountains had been logged which meant the end of some farmers' practice of allowing livestock to range freely in the forests. Industrialism touched the mountains by shifting the sources of income off the farm. In the late 1800s farming was still the primary source of income for the mountain family. However, by the end of the 1930s most farms had declined in size and farming became a part time venture. In the 1930s the national depression dried up many of the farmers' markets. The ever-resilient mountain farmer resorted to the subsistence farming that had seen the Appalachian agricultural community through settlement and into the twentieth century.

The 1930s also saw an increased government presence in the region with the purchase of the national forests and the Great Smoky Mountains National Park, as well as the activities of many New Deal agencies. Rural electrification, government agricultural departments, and tourism brought the region in closer contact with the rest of the country. The emergence of farmers organizations such as the Farmer's Federation and the Grange led to new interests in commercial farming and united many farmers to work together to explore all possible means of preserving farming as a way of life in the region.

As national industrialization and consolidation of the food system began with World War II and proceeded through the 1970s and 80s, mountain farmers were increasingly left out of widening distribution chains and farm consolidations. The topography of the mountain land made it impossible for most family farms to expand to the scale attained by farmers in other parts of the state and country. Transportation along winding mountain roads remained an obstacle for the region's farmers. Burley tobacco provided a stable and resilient crop that kept many mountain farms in production, until the tobacco buyout in 2004 removed much of the support for growers in this market. Once more, mountain farmers today are challenged with adapting to the demands of larger markets using the resources available to them.

Chapter 2: Current Production

The total land area in WNC is 9,642 square miles, or 4,442,880 acres. About 1.5 million of those acres are protected public lands, which leaves almost 3 million acres of land for private use. In 2002 just over a third of that land – 1,056,566 acres – was farmland. The majority of WNC farmland, approximately 60% of the total, includes woodland and other land used for pasture and grazing for farm animals. In fact, raising animals for food and dairy products is a significant part of the farm economy in the region, with more than half of all farms reporting cattle, hogs, sheep or chickens in inventory in 2002. A breakdown of WNC farms by category of farm products is provided below.

Category	Number of Farms
Meat and dairy	7165
Tobacco	1959
Christmas trees	1352
Horticultural crops	1197
Fruits and Vegetables	995

Source: USDA Census of Agriculture, 2002

The remaining 40% of WNC farmland, approximately 450,641 acres, was counted as cropland in 2002. Approximately half of that was harvested cropland, with the remainder made up of cropland used for pasture or grazing, cropland used for cover crops or in cultivated summer fallow, and cropland that was idle or not harvested that year. Table 2 shows the various crops produced on the approximately 231,000 acres of harvested cropland in 2002.

Category	Acres	% of Total
Crops grown primarily for animal feed or processing (corn for silage, corn for grain or seed, wheat for grain, soybeans, hay)	167,078	72%
Cut Christmas trees	29,133	13%
Nursery, floriculture, greenhouse, short-rotation woody crops	12,680	6%
Orchards, including apples, cherries, figs, grapes, peaches, pecans, plums & prunes, pears, other fruit and nuts	8,131	4%
Vegetables	7,284	3%
Tobacco	7,282	3%
Berries, all types	114	<1%
Total harvested cropland	231,702	100%

Source: USDA Census of Agriculture, 2002

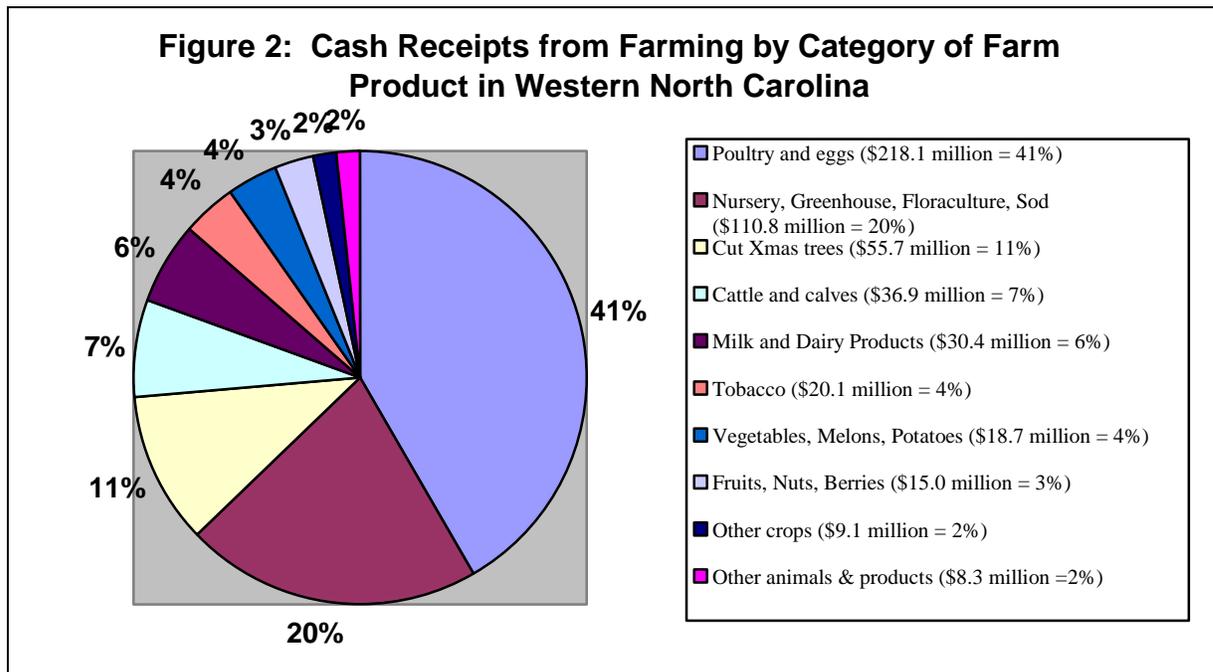
Chapter 3: Cash Receipts from Farming

Livestock, poultry, and their products accounted for more than half of agricultural receipts in the region in 2002.

Product Category	Value (\$)	Percentage
Value of crops including nursery and greenhouse	\$234,058,000	43%
Value of livestock, poultry and their products	\$308,627,000	57%
Total	\$542,685,000	100%

Source: USDA Census of Agriculture, 2002

Poultry and egg sales were the largest contributor to this total, accounting for nearly 42% of all cash receipts from farming that year. The majority of those sales occurred in Wilkes County where a large, commercial chicken processing facility operates. Within the crop category, nursery products and cut Christmas trees accounted for the largest portion of cash receipts, followed by tobacco, vegetables and then fruits, nuts and berries.



Source: USDA Census of Agriculture, 2002

Updated WNC Agricultural Statistics through 2004

The NCDA publishes agricultural statistics for the state and, to a more limited extent, for individual counties each year. Those figures indicate that total cash receipts from farming in WNC increased 67% from \$543.3 million in 2002 to \$907.8 million in 2004. A detailed breakdown by category of farm product is not available, but nearly two thirds of the increase can be accounted for by a \$187.7 million increase in cash receipts from nursery and greenhouse crops and a \$16.7 million increase in receipts from vegetable, fruit, nut and berry sales between 2002 and 2004. Cash receipts from tobacco declined during the period from \$20.1 million to \$13.8 million.

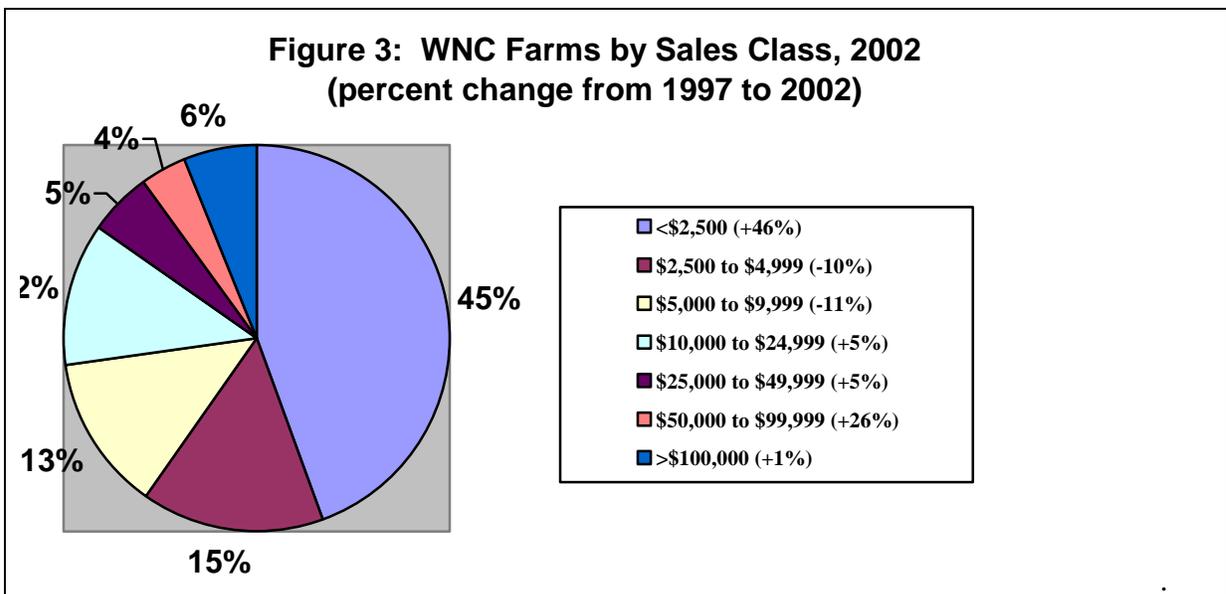
Chapter 4: Trends in Farming and Farmland

Those numbers give a snapshot of the WNC farm economy. A fuller picture emerges when trends and their effect on production are examined.

Decline in farms and acres of farmland

The number of farms nationwide has declined dramatically since the peak of nearly 7 million in 1935, with most of the decline occurring during the 1940s, 1950s, and 1960s. The decline in farm numbers still continues, but at a slower pace. In 2005, the number of farms in the U.S. was estimated at 2.1 million, 0.6% fewer than in 2004.⁴ In North Carolina, the number of farms has dropped from a peak of 302,000 in 1948 to 48,000 farms at the beginning of 2006. In both 2004 and 2005 North Carolina tied Florida and Tennessee for first place in the nation in terms of farm losses.

The largest decline in farms nationally has occurred in the category of farms with sales between \$10,000 and \$249,000.⁵ The number of farms in the highest and lowest sales classes have actually increased, reflecting both heightened consolidation among America's large farms and the proliferation of direct markets as sales outlets for small-scale farms. Figure 3 shows a breakdown of farms by sales class in WNC and the percent change in each category of sales class between 1997 and 2002. In this region, where most farms are small, the category of farms with sales lower than \$2,500 or higher than \$9,999 increased, but the number of farms with sales between \$2,500 and \$9,999 decreased.



Source: USDA Census of Agriculture, 2002

⁴ *Farms, Land in Farms, and Livestock Operations: 2005 Summary*. February 2006. National Agricultural Statistics Service.

⁵ *Ibid.*

While some farm losses in WNC are linked to consolidation among farms, the absolute amount of farmland in the region has also been declining. In Western North Carolina, there were approximately 12% fewer acres of farmland in 2002 compared to 20 years ago. The number of farmers in the region has also declined dramatically in recent decades, from 76,065, or 11% of the region's population in 1970, to 13,243, or just over 1% of the population in 2000.⁶

Aging of the farm population

According to the 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 2002 was 55.3 years of age.⁷ Definite relationships exist between age of farm operator and certain farm characteristics. For example, family farms typically have older farm operators than corporate farms, and farms in smaller income classes typically have older farm operators than larger income class farms.⁸ With the high concentration of small family farms in the region, it is not surprising that the average operator age in 2002 was higher than the national average in all but three of the 23 counties.

Beginning in 2002 the 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 indicate that only about 9% of all farms nationwide had multiple operators from different generations working on their farms as farm operators. The likelihood of having multiple operators is significantly lower for lower income class farms that predominate in this region. According to a 2006 survey of North Carolina Cooperative Extension agents, the aging of the farm population is one of the top issues affecting the future of farming in the region.⁹

The tobacco buyout and related shifts in production

The single largest influence on the North Carolina farm economy in recent years is commonly referred to as the 2004 tobacco buyout. Partial effects of the buyout began in the mid-1990s as growers began anticipating the end of federal tobacco support. Quota cuts and falling prices during the 1990s also contributed to a changing landscape of tobacco production in the region.

The buyout refers to Fair and Equitable Transition Act passed by Congress on October 22, 2004. The legislation eliminated federal price support and supply control programs which had regulated tobacco production and marketing since the Great Depression era. It opened

⁶ *Census of Population and Housing*. Various years. US Bureau of the Census.

⁷ *2002 Census of Agriculture*. National Agricultural Statistic Service, USDA.

⁸ *What We Know About the Demographics of US Farm Operators*. 2005. National Agricultural Statistics Service, USDA.

⁹ *A Survey of NC Cooperative Extension Agents in Western North Carolina*. 2006. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

tobacco to an unregulated, free market system beginning with the 2005 crop. Payments to growers and quota owners under the tobacco buyout are scheduled to take place over ten years, which means that the full effects of the buyout will not be known for some time.

For North Carolina, number one in the U.S. in the production of tobacco with 36% to 38% of total tobacco production, the impact of the buyout will be dramatic. Some experts estimate that as many as five out of six farmers growing tobacco will need to find another way to earn a living and that the majority of small-scale farms growing tobacco under the old system will no longer be viable in the tobacco market.¹⁰

There have been significant decreases in tobacco production across the state beginning in the mid-1990s. In the decade between 1992 and 2002, WNC experienced a 36% decrease in the number of acres devoted to tobacco – from 11,360 acres to 7,282 acres – and a reduction in the number of farms growing tobacco from 4,133 to 1,959.¹¹ By 2005, total tobacco acreage in the region had fallen even further, to 2,530 acres.¹²

With many regional farmers exiting tobacco production, there is a tremendous need and opportunity to shift farm production into different crops and markets. These shifts are occurring in a variety of areas. Between 1992 and 2002 the region experienced a 25% increase in acres devoted to non-food crops, split about evenly between horticultural crops (not including Christmas trees) and all other field crops. Fruit and vegetable acreage increased more than 16% in WNC from 1992 to 2002. While the number of farms with cattle and hogs declined during this period, the number of farms with chickens and sheep increased such that the overall number of farms raising animals for meat and dairy products remained relatively stable. Farm products sold directly to individuals for human consumption (“Direct Sales”) more than doubled between 1992 and 2002 from \$1.5 million to \$3.1 million. While the absolute amount of Direct Sales remains small, the increase is significant in looking at shifts in production from tobacco to other crops.¹³

Consolidation in the food system

Over the past four decades, concentration in the ownership and management of food production and marketing has dramatically restructured the agricultural and food industries in the U.S. and globally. Horizontal and vertical integration, mergers and acquisitions, and the use of supply chain management strategies are the mechanisms by which change has occurred.¹⁴ The result is that fewer but larger companies have come to dominate each stage of production, processing, and distribution:

- In production, the amount of farmland nationwide has not decreased in recent decades as much as the number of farms, leaving the remaining farms with larger average acreage. In 2003, large commercial farms – defined as those with annual

¹⁰ *The Agricultural Reinvestment Report*. 2006. Rural Advancement Foundation International-USA.

¹¹ USDA Census of Agriculture, various years.

¹² NCDA, Agricultural Statistics Division.

¹³ Entire paragraph: USDA Census of Agriculture, various years.

¹⁴ For a fuller discussion of these issues, see *The Infrastructure of Food Procurement and Distribution*. 2007. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

sales above \$250,000 – produced about 70% of total farm sales but only represented 7% of all U.S. farms.¹⁵

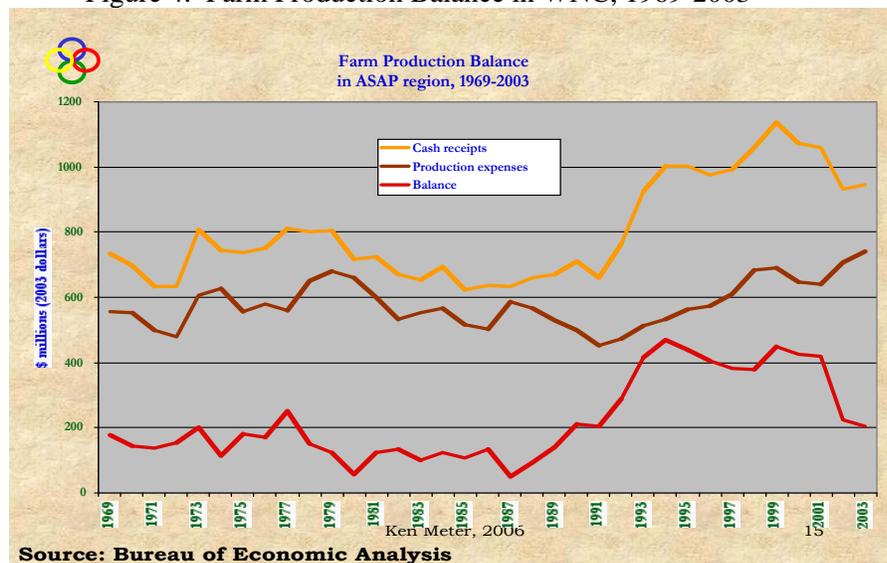
- In food manufacturing, the top 20 companies' market share increased from 36% of industry sales in 1987, to almost 44% in 1992, to 51% in 1997.¹⁶
- In the wholesaling sector, the top four general line wholesalers—which distribute a full line of food and nonfood products—increased from 26% of the market share in 1987 to nearly 41% in 1997.¹⁷
- In food retailing, the top ten grocery store chains accounted for nearly 70% of sales in 2005 compared with 53% in 1999.¹⁸

Consolidation in retail and wholesale markets makes it increasingly difficult for small farmers to maintain their market share.

Chapter 5: Economic Considerations

Farm Production Balance (FPB) is a term used to describe the profitability of farms.¹⁹ It equals cash receipts from farm sales less the costs of producing farm products. This is an aggregate measure, not an individual farm measure. Charting the FPB over time shows that farms in this region have earned a surplus from farming each year for at least the past 20 years. In Figure 4, the FPB is represented by the bottom line on the graph, which is the difference between cash receipts from farming and production expenses each year. Many other regions have shown a negative FPB during some or all of these years.

Figure 4: Farm Production Balance in WNC, 1969-2003



¹⁵ MacDonald, J., R. Hoppe, and D. Banker. *Growing Farm Size and the Distribution of Farm Payments*, Economic Brief Number 6. 2006. Economic Research Service, USDA.

¹⁶ Harris, J. M., Kaufman, P., Martinez, S. and C. Price. *The U.S. Food Marketing System, 2002. Competition, Coordination, and Technological Innovations into the 21st Century*. 2002. Economic Research Service, USDA.

¹⁷ Ibid.

¹⁸ *Food Industry Consolidations*. 2006. Produce Marketing Association.

¹⁹ Ken Meter, Crossroads Resource Center.

The long-term profitability of the region's farms (in aggregate) may be due in part to the fact that they are less tied to commodity programs than farms in other regions, particularly the grain belt regions in the Midwest and even in the eastern part of North Carolina. Decreased reliance on tobacco may actually contribute to a stronger farm economy going forward if tobacco growers are able to shift to other high value crops and markets.

It is important to note that while the region overall maintains a positive Farm Production Balance, many individual farms are losing money. In fact, more than half of WNC farms reported net losses in 2002. It is not uncommon for small family farms to lose money. In fact, some small farms stay in farming for reasons other than profitability, such as continuing a family tradition or maintaining a rural lifestyle.²⁰ Long term sustainability of the farm sector, however, depends on improving the ability of regional farms to be profitable.

The ability of individual farms to earn a profit depends on their ability to increase total revenues and/or lower total costs. Revenue streams and costs of production vary substantially by product. Meat prices, for example, are much higher per pound than vegetable prices, but the costs of production are also much higher. Revenues are driven by prices, which are largely out of producers' control, but it is possible for producers to earn higher prices in local markets if buyers are willing to pay a premium for locally-grown food.

Farmers might also earn higher prices by selling directly to buyers – consumers or businesses – rather than to intermediaries, such as packers, wholesalers and distributors. Whether or not that translates into higher profits depends on the extent to which transaction costs also increase. Transaction costs include everything from harvesting to packaging to marketing farm products and vary according to how or where products are sold.

The emphasis on expanding local markets for local farm products in this report is based on an underlying assumption that local markets can both increase the market value of farm products – by enabling farmers to earn a premium for locally-grown foods – and reduce total costs by shortening the transaction chain between farmers and markets.

²⁰ *Structural and Financial Characteristics of U.S. Farms: 2005 Family Farm Report*. 2006. Economic Research Service, USDA.

Cane Creek Valley Farm: Catching Up to Stay in Place

On the century-old dairy farm along Cane Creek near Asheville where she and three past generations of her family were raised, Amanda Sizemore is making a bold transition to keep the family farm together. Amid declining profits for milk and rapidly encroaching development in the valley, she and her father, George Nesbitt, have decided that organic vegetable production can offer the profit margin needed for the family to stay on the farm. The transition from dairy operation to vegetable growing involves infrastructure shifts and drastic changes in marketing. After selling most of her organic vegetables at an on-farm produce stand for one season, Amanda has begun to deal with brokers and retailers on the wholesale market and is finding ready demand for her produce. She discovered that customers at the farm stand are looking for different qualities in vegetables than wholesale buyers, and that farmers must be equipped to find buyers for the produce that they grow. Finding a rewarding place on the farm for every member of her large family is the goal that drives Amanda's transition into a new realm of farming.



Read the full case-study, page 17B

Chapter 6: Regional Strengths and Resources

This chapter reviews conditions that can be considered strengths or resources for advancing the development of the local food system in WNC. The information comes from two surveys of professionals working on agriculture issues in the region:

- One is a survey of North Carolina Cooperative Extension (NCCE) agents.²¹ Agents representing 22 counties in WNC completed a mail survey.
- The second is a survey of 22 professionals working in nonprofit organizations and academic institutions throughout the broader southern Appalachian region to advance local and regional food systems in their communities. The individuals are referred to as local food advocates.²²

Strong Demand

Strong demand for local food and farm products was overwhelmingly the top category of asset named by local food advocates. Survey respondents described strong demand in both consumer markets and larger scale markets. One program director summarized this sentiment by acknowledging that “demand is high, this is generally not a hard sell.” Another said, “There is a larger market than was originally anticipated – that includes mainstream grocery stores.” Overall, more than two thirds of local food advocates surveyed made some reference to strong demand when asked to name strengths of the local food movement in Southern Appalachia.

NCCE agents also described significant growth in local markets and a high level of interest among residents in buying local farm products. Almost 30% of agents surveyed named strong demand as an asset for the local food system.

Good Growing Conditions

Respondents to both surveys acknowledged that the region’s farmland is suitable for growing a wide variety of crops, that the climate affords a long growing season, and that there is still a significant amount of land in production or with good potential for being in production in the region. This was the top category of asset named by NCCE agents, and every single agent completing a survey named at least one type of food with good potential for new or expanded production in their county. Some survey respondents also referred to the beauty of the region’s farms and farmland as regional assets in terms of their value for tourism.

Characteristics of the Region’s Farmers

²¹ *A Survey of Cooperative Extension Agents in Western North Carolina*. 2007. Appalachian Sustainable Agriculture Project. Asheville, NC. (Appendix A)

²² *A Survey of Local Food Activities in the Southern Appalachian Region*. 2006. Appalachian Sustainable Agriculture Project. Asheville, NC. (Appendix A)

In describing farmers as a source of strength for the regional food system, NCCE agents emphasized the strong farming tradition and work ethic of the region's farmers. Local food advocates made comments like "farmers here are progressive" and "farmers here have been able to make transitions throughout history – this one should be manageable too." Altogether, more than half of respondents in each group included this item as a regional asset.

Nonprofits and Farm Support Services

A number of survey respondents recognized the strong network of nonprofit and university-based organizations (including NCCE) working on local food issues as a real strength for the region in terms of rebuilding local food systems. One respondent summarized this by saying, "We have many committed, determined people working on it."

What type of support is available for farmers in WNC?

Government Agencies

United States Department of Agriculture (USDA). The USDA is the Federal executive department charged with developing and executing policies on farming, agriculture, and food. Specific agencies focus on agricultural research and education; marketing of U.S. agriculture products; food safety and inspection; natural resource protection and conservation; health and care of animals and plants; economic support of U.S. producers; collecting and publishing statistical information relevant to the agricultural sector; and rural development.

Farm Service Agency (FSA). FSA is the USDA lead agency that manages and administers farm commodity, crop insurance, credit, environmental, conservation, and emergency assistance programs for farmers and ranchers through a network of federal, state, and county offices. State and county offices certify farmers for farm programs and pay out farm subsidies and disaster payments.

Natural Resources Conservation Service (NRCS). NRCS is the USDA lead agency that assists with the conservation, maintenance, and improvement of natural resources and the environment. Farmland protection is one major NRCS activity area. County-based NRCS staff work directly with farmers, ranchers, land-owners, and divisions of state and local government. In North Carolina, the state office is located in Raleigh. An area office is located in Waynesville and county offices are located throughout the state.

North Carolina Department of Agriculture and Consumer Services (NCDA&CS). Based in Raleigh, NCDA&CS provides a variety of services, programs, and technical assistance to farmers and agribusinesses with the goal of improving the overall state of agriculture in NC. Specific divisions collect, prepare, and disseminate statistical information relative to North Carolina agriculture; work to improve production efficiency and protect natural resources; offer services to mitigate the impact of natural and man-made disasters; coordinate the collection, storing, and distribution of USDA donated foods to primary and secondary schools, private schools, charitable institutions, and needy households; work to develop and expand markets for NC products; and protect public health and safety by regulating industries involving agricultural products.

Continued next page

North Carolina Cooperative Extension (NCCE). NCCE is based at two land-grant universities – NC State and NC A&T State University, in all 100 NC counties, and on the Cherokee Reservation. University-based extension specialists provide training and technical assistance to extension agents working in counties throughout North Carolina. County personnel provide education to the public as well as education and services for producers. Specific programs for farmers include a Specialty Crops Program, which helps growers diversify and develop new income sources by teaching them how to produce and market high value specialty crops.

Non-profit Organizations

North Carolina Farm Bureau. North Carolina Farm Bureau (NCFB) is a private, non-profit organization that promotes farm and rural issues in North Carolina through government relations, marketing, field representation, agricultural education, member services, and other programs. Organized in 1936, NCFB has the goal of protecting the interests of farmers and rural families and has served as a policy advocate—on behalf of farmers and private landowners—on commodity, environmental, and regulatory issues. NCFB has a large educational component that provides opportunities to broaden the knowledge and leadership capabilities of farmers, with special programs directed toward young farmers, ranchers, and women. Offices are located in all 100 North Carolina counties.

Other nonprofit organizations. Many nonprofit organizations are working to support farmers in the region through a variety of programs and services including: farmer education and capacity-building; referral and debt management services to small farmers; policy advocacy; public educational activities to raise awareness about issues affecting local farms; work to develop collaborative marketing, distribution, and processing channels; assistance to landowners to protect farmland, wild habitats, and watersheds; and rural economic development activities.

Commodity Associations

North Carolina commodity associations represent the interests of producers and work variously to improve NC agriculture through public promotion and educational activities; policy advocacy; and educational programs for growers. There are dozens of associations representing commodities produced in NC.

Chapter 7: Food and Non-Food Crops

Nursery products make up a substantial part of the farm economy in the region. Nearly 20% of harvested cropland was used to grow Christmas trees and all categories of nursery crops in 2002 and sales of those products accounted for just over 30% of the \$543 million cash receipts from farming in the region that year.²³ Christmas tree sales contributed approximately \$56,000 to the total and sales of all other nursery crops generated nearly \$111,000 in cash receipts. Despite the relative importance of these crops to the region's agricultural economy, little is known about local demand and local markets for non-food crops. They are not included in the market potential calculations that occupy Sections 2 and 3 of this report.

²³ 2002 *Census of Agriculture*. National Agricultural Statistic Service, USDA.

To explore the question of whether nursery crops could benefit from a local campaign similar to the one used for promoting locally-grown food a survey of farms producing nursery crops in the region was conducted during the summer of 2006.²⁴ The goals of the survey were to explore the applicability of a local label for trees, shrubs, and plants grown in the region and to explore interest among producers of those crops in expanding sales to local markets.

Given substantial differences in how Christmas trees and other types of nursery products are produced and marketed in NC, the decision was made to limit the survey to nursery growers that were not exclusively selling Christmas trees. For the survey, a mailing list was generated using directories from various trade organizations and from the NCDA&CS producer database. A total of 469 nursery growers were identified and mailed a written survey asking about the products they grow and issues related to marketing their products locally. 109 surveys were returned for a response rate of 23%.

The largest category of crop grown by survey respondents was nursery stock – which includes many different types of plants grown for sale in retail and wholesale nursery outlets – followed by cut Christmas trees, herbaceous perennials, short-rotation woody crops, and foliage plants. Nearly a third of the nursery growers reported that they also grow other types of farm products. Interest was high among survey respondents in pursuing *Appalachian Grown*TM labeling and advertising. More than 60% of respondents indicated that they would like to be contacted about using the label and/or being listed in ASAP's *Local Food Guide*. And nearly 70% said they thought sales of nursery products would benefit from *Appalachian Grown*TM labeling and advertising (see p. 26 for a description of the *Appalachian Grown*TM certification).

Just over half of nursery growers completing a survey reported that they currently sell to retailers, wholesalers, or consumers within the region and 61% reported selling to retailers, wholesalers, and consumers in other regions. When asked about their interest in expanding sales to local markets, more than 70% of respondents scored their interest as 8 or higher on a scale from 1 to 10.

Survey respondents also reported skepticism as to whether local markets would be viable and profitable given the perceived “oversupply” of nursery products in the region and the intensity of competition from so-called “big box retailers.” Determining whether consumers are willing to pay a premium for locally-grown nursery products would be important to the success of such an initiative. As with all other types of farm products there are particular infrastructure and distribution systems for nursery products. Understanding those systems is an important first step in any effort to expand local sales of nursery products.

²⁴ *The Value of Appalachian GrownTM Labeling for Nursery Growers in WNC*. 2006. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

SECTION 2: Demand for Local Food in Western North Carolina

Demand for food is often described in terms of spending. The region's one million residents spent an estimated \$2.2 billion on food in 2004, according to the Bureau of Labor Statistics' annual Consumer Expenditure Survey.²⁵ According to the survey, the average household spent \$3,119 on groceries and \$2,199 on food consumed in other places that year. For WNC, where 1,060,061 residents equals an estimated 424,024 households,²⁶ that means roughly \$1.3 billion was spent on food consumed at home and about \$932 million was spent on food consumed away from home. Just over three quarters of all away-from-home food spending typically occurs in restaurants.²⁷

There are also millions of visitors each year that purchase food from WNC businesses. The Blue Ridge National Heritage Area (BRNHA), which includes the 23 counties of Advantage West plus two additional counties, estimated tourism spending at restaurants of \$418.4 million in 2004 based on a total of 21.5 million visits to the region that year.²⁸ In a separate study examining tourism spending in the state, the private research firm Global Insight calculated tourism expenditures on food and drink in the region to be around \$363.9 million. Adding tourist food spending to resident food spending generates total estimated food spending in the region of approximately \$2.6 billion.

Demand for local food and farm products will be a subset of that, though actual consumer spending on local food and farm products is difficult to calculate. The USDA collects limited data on sales from farmers to consumers and no data at all regarding sales from farmers to businesses, organizations, or institutions in a particular geographic area. Besides data collection problems there are barriers that prevent consumers, organizations, and businesses in the region from purchasing as many locally-grown foods as they want (see Section 4).

Another complicating factor is that demand for local food is still growing and is likely to go on growing. According to the market research firm the Hartman Group, "local" is one of the food attributes most highly valued by consumers nationwide and a major trend affecting the food industry.²⁹ JWT, the largest advertising agency in the U.S. and fourth in the world, recently identified local food as one of the top ten trends for 2007 and predicted that consumer demand will shift from organics to locally sourced food.³⁰ Other sources

²⁵ 2004 Consumer Expenditure Survey. Bureau of Labor Statistics.

²⁶ Population estimate for 2004 from *Table 1: Annual Estimates of the Population for Counties of North Carolina*: Population Division, US Census Bureau.

²⁷ *Table 3: Food away from home*. Food, CPI, Prices and Expenditures Briefing Room. Economic Research Service, USDA.

²⁸ Evans, M., Davé, D., Stoddard, J., Ha, I.S. *Measurement of the Economic Vitality of the Blue Ridge National Heritage Area*: 2006. Blue Ridge National Heritage Area (BRNHA), North Carolina.

²⁹ *What Makes Local Special?* 2007. The Hartman Group, Inc: Bellevue, WA.

³⁰ *Ten Trends That Will Shape Our World in 2007*. 2006. PR Newswire, United Business Media: <http://sev.prnewswire.com/advertising/20061207/NYTH08407122006-1.html>

emphasize the growing importance of “local” for supermarkets as they try to demonstrate their connections to local farms and satisfy consumer concerns about food origins.³¹

In describing demand for local food in this section of the report, three different levels of spending are introduced:

- **Current spending** includes actual spending on local food reported by consumers and organizations in the region. Where actual spending is not available, estimates are calculated based on available information.
- **Desired spending** equals estimated spending by consumers and organizations that have high interest in local food but are not buying as much as they want, generally because they are not able to get it. It represents the amount of spending that could occur if there were improvements in infrastructure and distribution making it easier for buyers interested in local food to get it.
- **Maximum spending** reflects both improvements in infrastructure and distribution systems for local food plus changes in tastes and preferences such that more individuals and businesses desire to buy locally-grown food. As a maximum figure, this level of spending represents the highest possible level of spending for each market examined by assuming that all individuals, businesses or organizations in the category have high interest in local food.

Dollar values for these levels of spending are generated in different ways throughout this section. The calculations are based on survey data as well as published statistics and are included as formulas in many places for clarity. An overview of all surveys and data collection methods used for the project is provided in Appendix A, along with individual reports providing greater detail than is included in this section.

After **Chapter 1**, which reviews regional consumer preference research regarding locally-grown foods, Section 2 is laid out in terms of markets. **Chapter 2** examines direct markets, including farmers’ tailgate markets, Community Supported Agriculture, on-farm retail operations, and roadside stands. These involve sales of food and farm products directly from farmers to consumers. **Chapter 3** explores larger scale markets like food stores, restaurants, and organizations. In this chapter the focus shifts from consumer spending on locally-grown food to spending by restaurants, retailers and institutions. As the local food system grows larger, these are the places where demand for local food is most relevant for the region’s farmers in terms of quantity. **Chapter 4** summarizes demand for local food in both direct and larger scale markets.

Two additional notes are important regarding the assessment of demand for locally-grown food in this section. The first involves a focus on fresh fruits and vegetables. While the long-term projection includes bringing locally-grown meat, dairy and other processed farm products into local markets, the reality is that in the current food system little infrastructure

³¹ *Supermarket Trends: Buzz Words Include “Service,” “Local,” and “Ethnic.”* January 17, 2007. The Seattle Times, seattletimes.com

exists for processing and distributing many of those products for local sale. Moreover, much of the research on local food (here and in other places) is limited to exploring consumer and organizational interest in buying locally-grown produce. Produce is the category of food that includes fresh fruits and vegetables. Subsequent sections of the report will explore possibilities for expanding local markets for other food and farm products.

A second note is the fact that this section does not take into account the current supply of fruits and vegetables produced in the region. Adjustments are made for seasonality but not for current levels of production for any particular food. Section 3 covers these issues of capacity by examining production levels and supply constraints for the major types of food produced in the region.

Chapter 1: Consumer Preferences

A survey commissioned to measure consumer perceptions of locally-grown food demonstrates that consumers in the region support local farms and the businesses that sell local farm products.³² The survey, which consisted of phone interviews to 300 randomly selected consumers in Buncombe, Madison and Henderson Counties, concluded that residents prefer local food because they believe it is healthier and tastes better, that purchasing locally-grown food contributes to the local economy and protects the environment, and that it helps to preserve the rural character of the region. Three quarters of survey respondents indicated that when locally produced foods cost a little more, they are worth the extra cost.

The survey also concluded that demand for local food has increased in the region. Asheville area residents reported spending a greater percentage of their monthly budget on locally-grown food in 2004 than in 2000. In 2004, 27% of residents surveyed reported spending more than 10% of their monthly expenditures on locally-grown food, whereas only 20% reported spending that much in 2000. Most importantly, the study concluded that 82% of respondents indicated they would buy more locally produced food if it were labeled as local.

Research on consumer perceptions of local food in other regions echoes these findings. Several studies concluded that the term “locally-grown” has a significant influence on food purchasing decisions.^{33,34,35} One study reported that 56% of respondents were willing to pay more for produce from local businesses. The other two studies concluded that for 75% of consumer respondents and 55% of food business respondents, locally-grown food by family farmers was their first choice – even above certified organic choices – when shopping for produce and meat products. Key characteristics associated with locally-grown food in that research include freshness, taste, and quality. The studies also concluded, as the WNC

³² *Locally Grown Food Strategic Positioning Research*. 2004. Research Inc: Atlanta, GA. (Appendix A)

³³ DeCarlo, T.E., Franck, V.J., Pirog, R. *Consumer Perceptions of Place-Based Foods, Food Chain Profit Distribution, and Family Farms*. 2005. Leopold Center for Sustainable Agriculture. Ames, IA.

³⁴ Pirog, R. *Ecolabel Value Assessment: Consumer and Food Business Perceptions of Local Foods*. 2003. Leopold Center for Sustainable Agriculture. Ames, IA

³⁵ Pirog, R. *Ecolabel Value Assessment Phase II: Consumer Perceptions of Local Foods*. 2004. Leopold Center for Sustainable Agriculture. Ames, IA.

research did, that consumers place a high value on the perception that purchasing local foods supports local farmers and the local economy, promotes good health, and protects the environment.

Two of the studies also illustrate the value of labeling local products.^{36, 37} A majority of respondents in those studies indicated that informational labels are important to their decision making processes. The researchers concluded that when shopping for food consumers find locally-grown labels appealing; local labels convey product values of freshness, quality, and taste; and labels appeal to consumers' desire to support local farms and local communities. A separate pilot study in California and Oregon observed dramatic increases in local tomato sales when retailers and distributors identified the tomatoes with colorful local labels.³⁸

Taken together, the WNC-based research and the other studies cited demonstrate high desire for locally-grown food and suggest the willingness of consumers to pay more for local food. Just as clearly they demonstrate the value of product identification or labeling. Labeling is particularly important in larger scale markets in ensuring that producers receive the full value of any premium associated with locally-grown food.

Chapter 2: Direct Markets

Traditional market channels included in the USDA-defined category of Direct Sales include farmers' markets, Community Supported Agriculture (CSA), roadside stands, and other on-farm sales. The USDA distinguishes these as *sales of farm products for human consumption*, which means that nursery crops and Christmas trees are not counted as Direct Sales. A 20% increase in this type of agricultural receipt in the region between 1997 and 2002 indicates considerable growth in this area, though the absolute amount of Direct Sales remains relatively small. The total \$3.1 million in Direct Sales accounted for only 0.6% of all agricultural sales in the region in 2002. In all likelihood this value is low due to problems with USDA data collection methods. USDA data on direct marketing of farm products is widely believed to be both inaccurate and incomplete.³⁹

Table 4 provides some indication of growth in Direct Sales in the region by looking at the number of farms, tailgate markets, and CSA programs listed in ASAP's *Local Food Guide* each year. Farms are listed in the guide based on their interest in selling direct to consumers. Data describing farm sales through each market channel follows.

	2002	2003	2004	2005	2006	2007	Increase 2002-2007
Farmers' tailgate markets	32	33	34	33	34	34	+ 6%
CSA farms	12	14	17	21	20	22	+ 83%
Family farms	58	127	144	167	182	205	+253%

³⁶ Pirog, R. 2003.

³⁷ Pirog, R. 2004.

³⁸ *Ecotrust Annual Report*. 2003. Ecotrust: Portland, OR.

³⁹ *Direct Marketing Today: Challenges and Opportunities*. 2000. Agricultural Marketing Service, USDA.

Farmers' Tailgate Markets

As a means of food distribution, farmers' markets provide important urban-rural linkages. Over the past two decades the number of farmers' markets in the U.S. has grown alongside increasing consumer interest in finding fresh products from the farm. Over the past decade the number of farmers' markets nationwide increased almost 20%, from 1,755 in 1994 to 4,385 in 2006.⁴⁰ Based on the number of listings in the *Local Food Guide*, there are a total of 34 farmers' tailgate markets in WNC.

Information about sales of locally-grown food through farmers' tailgate markets in the region is available from two sources. The first is a set of surveys conducted at six markets in Buncombe and Madison counties during the summers of 2003 and 2004.⁴¹ A total of 694 customer interviews and another 732 rapid-response "dot surveys" were collected by ASAP staff and the Mountain Tailgate Market Association (MTMA), with analysis by the Center for Assessment and Research Alliances at Mars Hill College.

The market surveys indicate that farmers' tailgate markets are supported by a loyal base of repeat customers and are growing in customer support. Based on customer counts, more than 2,000 customers shopped at the markets on any given week during the study period. Of that number, 46% shopped at the markets every week and another 20% shopped at the markets every two weeks. The number of first-time shoppers at the Asheville city markets increased from 15% to 20% of total shoppers from 2003 to 2004.

Spending at farmers' tailgate markets is also increasing. Per capita expenditures at the markets grew from \$13.41 in 2003 to \$15.01 in 2004, a 12% annual increase. More importantly, the percentage of weekly shoppers spending more than \$20 at the markets increased from 24% in 2003 to 36% in 2004. Using the written surveys for all markets across both years, the estimated per capita customer expenditure is \$14.18.⁴² Combining customer survey responses about expenditures at the four markets in the Asheville city limits with customer counts taken at those markets, a weekly sales total of \$24,120 was calculated.⁴³ Using this figure as a weekly average, total sales at the four markets for the months of June, July and, August were estimated at over \$300,000, or \$75,000 per market.

⁴⁰ *Farmers Markets*. Agricultural Marketing Service, USDA.

⁴¹ *A Market Analysis of Farmers' Tailgate Markets in Buncombe and Madison Counties*. 2005. Center for Assessment and Research Alliances, Mars Hill College. Mars Hill, NC. (Appendix A)

⁴² This figure was arrived at by multiplying the number of respondents in seven different self-reported spending categories by the midpoint value of the category for 664 shoppers at the markets in 2003 and 2004, then totaling the results and dividing by 664 to obtain an average per capita spending amount. (See p. 70A in Appendix A)

⁴³ See page 73A in Appendix A.

Recognizing that there are at least 30 other farmers' tailgate markets in the region, sales at all markets together may be as high as \$2.6 million dollars (34 markets X average of \$75,000 per market = \$2.6 million). In all likelihood, though, sales at markets in more rural areas are much lower than sales at the Asheville city markets. A more conservative estimate of \$1.4 million would reflect sales at markets outside of Asheville as half as high as the city markets ([\$75,000 X 4 markets in Asheville city limits] plus [\$37,500 X 30 remaining markets] = \$1.4 million).

Shoppers at the four Asheville-area markets were asked about additional shopping they planned to do related to their trip to the market. Economic activity generated by shoppers who indicated that the markets brought them to town that day *and* that they would do additional shopping while they were in town was estimated at \$191,620 for the summer months.⁴⁴ Combining that number with the \$300,000 in direct spending at markets results in a total economic impact figure close to \$500,000 per year for the four markets in the study group.

The tailgate market surveys also confirmed that the popularity of the markets is about more than just food. When asked what they liked most about the markets, customers overwhelmingly indicated that they enjoy the markets as community social events and they appreciate the opportunity to support local farmers.

The second source of information about sales of local farm products through farmers' tailgate markets in WNC is a 2003 survey of 61 vendors from eight tailgate markets in Buncombe and Madison counties.⁴⁵ Vendors described tailgate markets as an effective way to market local farm products, with each of the eight markets described as the "most profitable market" by at least one group of vendors. Estimates provided by the vendors of total season sales at the top four markets where they sell generated a seasonal total of \$390,946 in direct sales for the 61 vendors surveyed.

Freeman's Farm: Growing Trust in the Fields

Calvin Freeman has been growing for market in Rutherford County since he was a teenager. At that time, he and his twin brother would work in the fields with their father and take produce to the market in Asheville once a week. Calvin now sells at the Marion Flea Market and at the Rutherford County Tailgate Market, where his customers return week after week and season after season. They even drop by his farm or call him on the phone to see what he has available to sell. Calvin has found over the years that what keeps his customers coming back to the market are his consistent quality produce and his personal response to buyers' requests. "I always try to grow what people want," says Calvin. "My number one priority is high quality. And of course, to keep my produce looking good. Because if it's pretty," he laughs, "it'll sell."



Read the full case study, page 8B

⁴⁴ See page 75A in Appendix A.

⁴⁵ *Results from a Survey of Tailgate Market Vendors*. 2006. Appalachian Sustainable Agriculture Project. Asheville, NC. (Appendix A)

Potential for Expanded Tailgate Market Sales

The potential for expanded sales through farmers' tailgate markets lies in increasing the number and location of markets in addition to continuing the market promotional activities that have been so effective. Mostly, that means adding markets in locations where they are not currently operating, particularly further from the hub of markets and local food activity in the Asheville area. Convenience is important based on the tailgate market survey finding that the majority of shoppers lived within five miles of the markets studied. Expanding tailgate market sales also means offering training, workshops and other resource materials for farmers interested in selling at the markets.

In terms of infrastructure, farmers' markets require a permanent and convenient location with adequate space for vendor stalls, parking for shoppers, and in some cases restroom facilities. For uncovered markets like most in this region, vendors also need tents, tarps, or some other kind of shelter to protect products and delineate their stalls. They need tables or shelving to display their products and adequate refrigeration and storage units for products like meat, eggs, and cheese. Market planning must occur in cooperation with local businesses and city or county governments.

Increasing market opportunities for farmers' markets may also encompass expanding their reach into low-income market segments. Current USDA programs like the Women, Infants, and Children (WIC) Farmers Market Nutrition Program and the Senior Farmers Market Nutrition Program enable program beneficiaries to shop at farmers' markets for fresh foods. Nationwide the USDA reports that almost 60% of markets participate in farmers market nutrition programs.⁴⁶ In Western North Carolina, farmers' markets in eight counties participate in the WIC program and markets in four counties participate in the Senior Farmers Market Program.

Community Supported Agriculture

Community Supported Agriculture (CSA) is a growing form of direct marketing by farmers. CSA is an arrangement whereby consumers pledge to purchase a share of the produce each week from a particular farmer at a price that is established at the start of the growing season. The farmer gains the security of having a guaranteed market for their produce and revenue at the start of the growing season. The consumer receives a variety of fresh, locally-grown produce all season long as well as the opportunity to know where their food comes from and how it is produced. A census of CSA programs taken by the USDA Alternative Farming Systems Information Center (AFSIC) in 1999 reported no such programs in North Carolina. Today there are 28 North Carolina-based CSA farms listed by AFSIC and 20 CSA farms listed in ASAP's *Local Food Guide*.

In the fall of 2004, twelve CSA farms completed an email survey in which they were asked to provide details about their CSA programs.⁴⁷ Programs in WNC vary widely in size, with

⁴⁶ USDA AMS. Farmers Markets. <http://www.ams.usda.gov/farmersmarkets/FMstudystats.htm>

⁴⁷ *Community Supported Agriculture in the French Broad River Basin*. 2005. Appalachian Sustainable Agriculture Project. Asheville, NC. (Appendix A)

the smallest selling just 4 shares in 2004 and the largest selling 52 shares that year. In terms of acreage, the largest CSA farm reported 7 acres in production, and the smallest had only a 5,000 square foot greenhouse. For all of the farms surveyed, the CSA program represented only a portion of their total farm business, some as little as 10% and others as much as 90%.

How important are organic food sales in local markets?

Congress passed the Organic Foods Production Act of 1990 to establish national standards for organically produced commodities. The legislation was implemented by the USDA in 2002. The standards address the methods, practices, and substances used in producing and handling crops, livestock and processed agricultural products.

Organic has been one of the fastest growing segments of food production in the U.S. for over a decade. In 1990, there were under a million acres of organic farmland in the U.S. By 2005 all 50 states reported some certified organic farmland. In total, U.S. producers dedicated over 4.0 million acres of farmland – 2.3 million acres of cropland and 1.7 million acres of rangeland and pasture – to organic production systems in 2005.⁴⁸

A 2002 survey of farmers' market managers in more than 20 states confirmed that organic food sales are prominent in local food outlets like farmers' markets because customers at those markets tend to value having direct access to farmers that use ecologically sensitive agricultural techniques.⁴⁹ That study found modest price premiums associated with organic foods, though other research has shown considerably higher premiums for organically produced farm products (as high as 262% for organic broilers, for example).⁵⁰ The 2003 survey of tailgate market vendors in WNC concluded that only 12% of vendors surveyed were certified organic, but four times that many reported using organic practices. According to some vendors – who cited extra cost and time required for certification as barriers to becoming certified organic – customers were more concerned with production practices than the organic label.

Organic certification may be more important in larger scale markets, particularly retail food stores. It is likely that the production of certified organic crops will increase in the region if local markets demand the use of organic practices and labeling. In WNC, 101 farms reported selling approximately \$425,000 of certified organic products in 2002, eight percent of the state's total that year. Primary organic-producing counties were Ashe, Buncombe, Madison, Rutherford, and Wilkes.

If organic food sales in WNC average 2.5% of total retail food sales – the same as the national ratio of organic food sales to total food sales in 2005 – then the market for organic food in WNC is \$32.5 million. That includes all types of organic foods, not just farm products. The fruit and vegetable portion of that total may be as high as \$10 to \$15 million, based on the fact that fruits and vegetables account for a larger share of organic food sales than any other type of food.⁵¹ Seasonality constraints will limit the extent to which regional producers can meet that demand. Using a “seasonality adjustment” described on page 38 of this report, the potential for locally-grown organic fruits and vegetables in the region may range from \$2.6 million to \$3.9 million.

⁴⁸ *Organic Farming and Marketing Briefing Room*. Economic Research Service, USDA.

⁴⁹ *Organic Produce, Price Premiums and Eco-labeling in U.S. Farmers Markets*. 2003. Economic Research Service, USDA.

⁵⁰ *Organic Poultry and Eggs Capture High Price Premiums and Growing Share of Specialty Markets*. Economic Research Service, USDA.

⁵¹ Dimitri, C. and C. Greene. *Recent Growth Patterns in the U.S. Organic Foods Market*. 2002. Economic Research Service, USDA.

In looking at the dollar potential of CSA programs as a market channel for selling local farm products, the 1999 National CSA Farm Survey is instructive. From those data, a median figure of \$15,000 was determined to be the best measure of CSA gross income, excluding the influence of particularly large and extremely small programs⁵². For the 20 CSA farms in the region, that translates into a rough estimate of \$300,000 in cash receipts from farming occurring through Community Supported Agriculture each year. This is a very imprecise way to measure CSA income in WNC and an area where more research is needed to accurately measure the contribution of this type of farming to the region's agricultural economy.

Growth in this market channel can occur by increasing sales through existing CSAs or increasing the number of CSA farms operating in the region. As with expanding tailgate market sales there are infrastructural obstacles to expanding CSA sales beyond their current level. For example, there is poor public awareness about CSA programs, there are additional requirements for producers such as the need to communicate with members and manage record-keeping requirements, and additional time is required for sorting, packing, and distributing shares. Of the CSA programs surveyed, farmers were mixed in their interest in expanding. Many were, however, interested in collaborating or sharing resources with other CSA programs.

In terms of demand, indications are that there is good potential for growth given consumer satisfaction with the model. Nearly all of the CSA programs surveyed collect feedback from members in some way and most report this to be positive. Members are reportedly satisfied with both the farm products they receive and the opportunity to communicate directly with farmers. CSA programs also provide social and educational opportunities for members.

Roadside Stands and Other On-farm Direct Markets

The North Carolina Department of Agriculture and Consumer Services (NCDA&CS) maintains a database of Certified Roadside Farm Markets in the state. The database currently lists 27 roadside markets in WNC that sell produce grown by the operator and other local farmers. Many other farmers sell direct to consumers through on-farm retail. Of 303 apple farms in the region in 2002, 75 have listings for on-farm retail operations on the NCDA&CS website and 68 are listed in ASAP's *Local Food Guide*. Of 1,352 Christmas tree growers in WNC in 2002, approximately 340 are estimated to market their products direct to consumers through choose-and-cut operations.⁵³

These outlets – like other direct market channels – provide opportunities for farmers to capture 100% of the retail value of sales, but there can be significant costs associated with staffing the retail operation. No data is available detailing the dollar value of sales through these outlets.

⁵² Lass, D.G., Hendrickson, J. & Ruhf J. *CSA Across the Nation: Findings from the 1999 CSA Survey*. 2003. Center for Integrated Agricultural Systems, Madison WI.

⁵³ According to the NC Christmas Tree Association, 25% of Christmas tree growers in NC have choose-and-cut operations.

Chapter 3: Larger Scale Markets

Researchers describe a process called “scaling up,” which refers to efforts to increase local food sales by reaching larger markets than are available through traditional Direct Sales categories.⁵⁴ There is a practical limit to how much food can be sold through direct markets and the largest share of most consumers’ food spending will continue to be in grocery stores and supermarkets. Larger scale markets include retailers, restaurants, other businesses, and institutions that serve or sell food.

What is the farm value of food?⁵⁵

The farm value is a measure of the return farmers receive for the food they sell. According to the USDA Economic Research Service – which tracks the farm-to-retail price spreads of many different foods – the farm value of food sales varies greatly for different types of foods. Generally speaking, the farm value share of the food dollar decreases as the degree of processing increases and as the distance (measured in number of transactions) between farmer and end user increases. With increased consumer demand for convenience foods, food manufacturing – which adds economic value to agricultural products through processing and packaging – has significantly increased in importance. With the increasing role of food manufacturing, farmers receive smaller proportions of what consumers pay for food products at the retail level.

Across all food categories, the farm value share of the food dollar was most recently estimated at around 20%. For fresh fruits and vegetables, the farm value share was calculated in 2004 as 23.5% and 26.6% for fresh fruits and vegetables, respectively. In other words, the farmer earned 23.5 cents for every dollar of fresh fruits sold in retail outlets that year and 26.6 cents for every dollar of fresh vegetables sold. The rest went to retailers and intermediaries, such as wholesalers, packers, processors and distributors. This is in contrast to Direct Sales, where farmers earn 100% of the sales price (although with Direct Sales there are other hidden costs associated with transporting, packing and marketing farm products).

The farm-to-retail price spread is the difference between the farm value and the retail price for food. It is not the same as a profit margin, which is the difference between what a company or business pays for an item and what it sells the same item for. The farm-to-retail price spread includes profit margins, but it also accounts for payments associated with assembling, packing, processing, and distributing farm products after they leave the farm. In other words, it includes both costs and profits of retailers. Likewise the farm-to-wholesale price spread involves the costs and profits of wholesalers.

In this chapter there is a shift in focus from spending at the consumer level to spending at the organizational level. That involves accounting for differences in the price of food at different points in the transaction chain from farm to table. The \$2.6 billion worth of food purchased by residents and visiting tourists, for example, will at an earlier point be purchased for considerably less money by businesses and organizations. What consumers pay for food is

⁵⁴ Unger, S. & Wooten, H. *A Food Systems Assessment for Oakland, CA: Toward a Sustainable Food Plan*. 2006. Oakland Mayor’s Office of Sustainability and University of California, Berkeley, Department of City and Regional Planning.

⁵⁵ *How low has the farm share of retail prices really fallen?* August 2006. Economic Research Service, USDA.

the *retail value* and what businesses pay for the same food is the *wholesale value*. There is a third value, the *farm value*, which reflects the amount that farmers receive for the food they sell (see box, next page). Farm value is sometimes referred to as a percentage of the retail price of food. These different values complicate the analysis but are important to understanding the potential impact of local markets on the region's food and farm economy.

Throughout this chapter figures describing current, desired, and maximum spending on local food are wholesale values. In other words, the reported figures represent amounts retailers, restaurants, businesses, and institutions might spend on food, not what consumers would spend. Before making comparisons with direct market channels or comparing reported figures against the total \$2.6 billion in consumer food spending in the region, it is necessary to convert the wholesale values to retail values.

In this chapter and throughout the report a simple formula in which the wholesale value equals half of the retail value of food is used to make these conversions. In other words, the amount a business pays for food is calculated to equal half of what it sells the food for. The difference – which can be referred to as the wholesale-to-retail price spread – includes retailer profit as well as costs of doing business. In reality, wholesale-to-retail price spreads vary both by type of food and type of market channel and fluctuate over time.⁵⁶

Table 5 provides an overall picture of current and potential spending on local produce by large-scale buyers in the region. Figures in the table are based on surveys and other research, which is detailed in the remainder of the chapter.

	Current Spending	Desired Spending	Maximum Spending
Full service groceries	\$5.1 million	\$13.5 million	\$17.0 million
Specialty food stores	\$100,000	\$234,000	\$936,000
Full-service restaurants	\$117,000	\$760,500	\$3.0 million
Summer Camps	\$27,500	\$51,840	\$172,800
Public Schools	\$19,000	\$139,230	\$198,900
Colleges/Universities	\$18,450	\$169,000	\$234,000
Hospitals	\$25,600	\$289,536	\$332,800
Total (wholesale spending)	\$5,407,550	\$15,144,106	\$21,874,500
Total (retail equivalent)	\$10,815,100	\$30,288,212	\$43,749,000

Source: Various surveys and other research described throughout this section

- Column 1 is actual local food spending through each market channel based on a combination of reported and estimated figures.

⁵⁶ This simple formula was developed after reviewing limited price spread data available from the USDA and informal data on food purchases and food sales provided to ASAP by its Campaign Partners.

- Column 2 is the maximum amount of produce organizations that are already buying local food in each category could buy, plus similar spending by organizations that have high interest in local food. It is the amount interested organizations could buy if there were improvements to infrastructure and distribution systems for local produce.
- Column 3 is essentially the highest level of spending for each type of business. These figures assume improvements to infrastructure and distribution systems for local produce in addition to changes in tastes and preferences so that all businesses in each category have high interest in local food. Thus the figures represent upper limits for spending on local produce by each type of large-scale buyer in the table.

There are some business categories not accounted for in Table 5 – hotels, convenience stores, fast food restaurants, and recreational facilities that sell food, for example. Those particular types of businesses were presumed to have low potential for buying local food and are not included in calculations. Including those groups would result in higher (though likely not as realistic) estimates of the potential for local produce purchases by large scale buyers in the region.

RETAIL GROCERIES

The best source for estimating sales through retail food stores at the county level in WNC is the 2 percent food local sales and use tax database.⁵⁷ Those data indicate total retail food store sales in WNC of approximately \$1.3 billion in 2005. That includes food sales through all types of outlets, from convenience stores to specialty food stores to large supermarkets and supercenters. It corresponds to the \$1.3 billion in regional at-home food consumption estimated from the Bureau of Labor Statistics' Consumer Expenditure Survey. Using ratios provided by the Produce Marketing Association regarding the proportion of produce sales through each category of outlet, the following breakdown of produce sales through food stores in the region is available.

Category of Store	Estimated 2005 Produce Sales	% of Total
Full Service Grocers	\$130,768,540	91%
Specialty food stores and "other" including health food stores, food co-ops, etc.	\$7,185,085	5%
Warehouse clubs	\$4,311,050	3%
Convenience stores	\$1,437,017	1%
Total	\$143,701,693	100%

Sources: NC Department of Revenue; Produce Marketing Association.

Using the wholesale-to-retail conversion formula described on page 34, these produce sales can be used to estimate produce spending by retail food stores in the region (Table 7).

⁵⁷ *County Tax Revenue Tables, Table 55.* North Carolina Department of Revenue.

Table 7: Estimated Produce Spending by Retail Food Stores in Western North Carolina		
Category of Store	Estimated 2005 Produce Purchases	% of Total
Full Service Grocers	\$65,384,270	91%
Specialty food stores and "other" including health food stores, food co-ops, etc.	\$3,592,542	5%
Warehouse clubs	\$2,155,525	3%
Convenience stores	\$718,508	1%
Total	\$71,850,846	100%

Convenience stores and warehouse clubs are assumed to have lower potential as market channels for locally-grown food and are not included in the potential demand calculations in this report. Market potential is thought to vary significantly between the remaining two categories – full-service groceries and specialty food stores.

Full-Service Groceries

Full-service groceries represent a potentially large market for WNC growers, though the ability of regional growers to satisfy this demand will depend on their ability to meet the terms of the retailers regarding packaging and delivery of farm products. Information about the retail grocery market comes from interviews, observations of regional retailers' marketing practices, and national market research.

A series of in-depth interviews were conducted with representatives from Ingles Markets, Earthfare, and Greenlife Grocery – the three full-service groceries participating in ASAP's Local Food Campaign. Together, those companies operate approximately 64 individual stores in the region. According to these interviews, one of the most important issues influencing the ability of regional farmers to sell to full-service groceries concerns food safety. This includes increasingly complex government requirements for certifying the safety of food as well as the need for producers to carry liability insurance. Other important issues for grocers relate to the seasonality of production in the region and the need for grocers to maintain relationships with year-round suppliers.

According to the interviews current combined produce purchases by Ingles, Earthfare, and Greenlife are around \$34 million per year, almost half of the total estimated \$71.9 million in retail food store produce purchases for the entire region (Table 7). On average, company representatives estimated that roughly 10 percent to 20 percent of total annual produce purchases involve locally-grown produce. This estimate may be high since retailers often assume that all produce provided by local or regional distributors and wholesalers is locally-grown. In reality, such companies often source food from other regions to supplement the local products they offer in order to maintain a consistent, year-round supply.

While the details of local food purchasing by other grocery retailers in the region are not available, this report assumes high interest among 80 percent of the region's full service

grocery retailers including grocery supercenters. This assumption is grounded in both the national market research identifying local as a top trend that will affect the food industry in the coming years and in the prevalence of local food promotions by the regions' other full service grocery chains. Excluded from this percentage are the region's convenience stores, warehouse clubs, and discount groceries, which are assumed to have lower potential as market channels for locally-grown food.

Figure 5: INGLES-KING KULLEN CASE STUDY COMPARISON

With the largest of the three full-service groceries joining ASAP's Local Food Campaign in 2006, a useful model for examining potential is a case study style of comparison between Ingles and the King Kullen chain of grocery stores in New York.

- ❖ Ingles Markets is a leading supermarket chain operating close to 200 stores in six states, approximately 60 of them in WNC.⁵⁸
- ❖ King Kullen is a regional supermarket chain operating 40 plus stores in Long Island and Staten Island in New York.⁵⁹
- ❖ Five years ago King Kullen Grocery made a commitment to purchase more locally-grown food. For King Kullen, the decision to buy locally-grown produce made good business sense. During the growing season, the chain has a consistent source of quality produce and King Kullen customers are guaranteed fresh, locally-grown vegetables. A highly recognizable logo identifies local farm products in King Kullen stores and demonstrates King Kullen's support of the local community and local farmers. Because the store understands that local produce attracts consumers to their stores, King Kullen pays farmers at the higher end of the market price.⁶⁰
- ❖ During the first year, King Kullen spent roughly \$100,000 on produce from Long Island farmers. In 2006, King Kullen is expected to spend between five and six million dollars, more than a 50 times increase.⁶¹
- ❖ In Western North Carolina, Ingles' commitment to purchase more locally-grown produce creates unprecedented opportunities and has the potential to significantly increase revenues for the region's farmers.

If Ingles Markets is able to incorporate locally-grown food to the same extent that the similar-sized regional grocery chain King Kullen has, local food purchases by that company alone could reach \$5 to \$6 million by the year 2011.

There is an upper limit to the amount of produce retail food stores can buy from regional growers based on climate- and soil-related limitations. WNC farmers could not supply 100% of produce to local retailers because they cannot grow oranges, lemons, or bananas, for example, no matter how much local food infrastructure is improved. They can, however, grow each of 38 different types of fruits and vegetables that accounted for 80% of produce sales in retail outlets nationwide in 2005. In Table 8 (next page) those 38 items are listed along with their corresponding share or percentage of total retail produce sales.

⁵⁸ *All About Ingles: A Company Profile*. 2004. Ingles Markets. Asheville, NC.

⁵⁹ Halweil, B. *Local Produce Fit for a king*. 2004. The East Hampton Star Online.

⁶⁰ Reich-Hale, D. *King Kullen Trumpets Local Farm Connection*. 2004. Long Island Business News.

⁶¹ Joe Gergela, executive director, Long Island Farm Bureau, personal communication 2006.

Based on the table, an adjustment for seasonality would be to say that WNC farmers could grow 80 percent of retail produce items for a third of the year, or 26 percent of the total (80% X 33% = 26%). In other words, farmers can grow all of the items listed in Table 8, but some only in the four months of the summer season and others only in the winter season. Some items, like apples, can be supplied to local markets for more than four months and others for less. Without being able to calculate exactly how many months each item would be available to local markets, the 26 percent ratio is intended to provide a reasonable adjustment for the seasonality of production in the region.

Table 8: \$ Share of Retail Produce Sales for Selected Fruits and Vegetables					
Vegetables	% of Total Produce Sales in 2005	Vegetables (Continued)	% of Total Produce Sales in 2005	Fruits	% of Total Produce Sales in 2005
Asparagus	1.3	Mushrooms	2.3	Apples	7.7
Beans	1.1	Onions	4.2	Berries	6.3
Broccoli	1.9	Parsnip	0.1	Cherries	1.6
Beets	0.1	Peas	0.3	Grapes	7.3
Cabbage	0.7	Peppers	3.2	Nectarines	1
Carrots	3.2	Potatoes	5.8	Melons	5.3
Cauliflower	0.7	Pumpkins	0.2	Peaches	1.5
Celery	1.6	Radishes	0.4	Pears	1.2
Corn	1.2	Roots	0.1	Plums	0.8
Cucumbers	1.8	Spinach	0.7		
Eggplant	0.2	Sprouts	0.2		
Garlic	0.4	Squash	1.5		
Greens	0.3	Sweet potatoes	0.8		
Leeks	0.1	Tomatoes	8.5		
Lettuce	4.1				
Column Totals	18.7		28.3		32.7
Total share of produce accounted for by fruits & vegetables that can be grown in WNC: 79.7%					

Source: Fresh Look Marketing, <http://www.freshlookmarketing.com> (reported by Produce Marketing Association)

Demand for local produce through the full-service grocery market channel:

- **Current spending** is calculated as \$5.1 million. This represents 15% of total estimated produce purchases for 60 Ingles stores, three Earthfares and one Greenlife Grocery. While there are certainly other retail groceries in the region buying locally-grown produce, they are not included in this estimate because no details about those purchases are currently available. (15% X \$34 million = \$5.1 million)
- **Desired spending** for local produce is calculated as \$13.5 million. This figure represents 26% of total produce purchases for 80% of full service grocery stores in the region; it is the assumed maximum amount these stores could buy given improvements in local food distribution and infrastructure but recognizing limitations associated with climate and growing conditions. (80% X 26% X \$65.4 million = \$13.5 million)

- **Maximum spending** is calculated as \$17 million, which is 26% of produce purchases for all full-service groceries in the region. This assumes improvements in infrastructure plus increased interest in local food by the region's retailers to the highest possible level. (26% X \$65.4 million [Table 7] = \$17 million)

Specialty Food Stores

Specialty food stores hold good potential for increasing local produce sales because they are generally independently owned and operated and typically feature produce to a greater extent than full-service groceries. According to the Produce Marketing Association, produce accounts for 70% of sales through specialty food stores compared to just to 16% for supermarkets and supercenters.

It is difficult to say with certainty how many of this category of store there are in the region. If the ratio of specialty food stores to total retail food stores is the same as it is statewide, there may be around 70 specialty food stores in the region.⁶² That includes food co-ops, ethnic groceries, fruit and vegetable markets, and other types of stores marketing a specialized line of food. In total, the region's specialty food stores purchase an estimated \$3.6 million of produce each year (Table 7, page 38).

Demand for local produce through the specialty food store market channel:

- **Current spending** is \$100,000. This is not a calculation but is based on current purchasing reported by specialty food stores belonging to ASAP's Campaign.⁶³
- **Desired spending** for local food among specialty food stores is estimated as \$234,000. This represents 26% of specialty food store produce purchases for a quarter of all specialty food stores in the region. The 26% represents the seasonality adjustment explained on page 38, and 25% is an assumed interest level for this category of store (25% X 26% X \$3.6 million = \$234,000).
- **Maximum spending** is calculated as \$936,000 and reflects 100% of specialty food stores purchasing 26% of total produce locally (26% X \$3.6 million = \$936,000).

RESTAURANTS

According to the US Economic Census, there were more than 1700 *Eating and Drinking Places* in all of WNC in 2002 with total estimated sales of \$914.5 million. The high concentration of restaurants in the region is due in part to a strong tourism industry.

In exploring the potential of restaurants as a market channel for local farmers, the following analysis is limited to full-service restaurants, those that provide food services to patrons who order and are served while seated.⁶⁴ Using this category of restaurant excludes the majority of chains and franchises in the region, though not all. Chains and franchises, compared to

⁶² *Retail Trade by Industry, NAICS Code 445*. 2002 Economic Census. US Census Bureau.

⁶³ In-house data, Appalachian Sustainable Agriculture Project.

⁶⁴ Definition for NAICS Code 722110, "Full-service restaurants."

restaurants that are independently owned and operated, are more often limited in their ability to choose where and how they obtain food.

Restaurants enrolled in ASAP's Campaign have reported steady growth in local food purchasing over time, with local produce representing anywhere from 5% to 75% of total produce purchases, depending on the season. As with food stores, seasonality and growing limitations influence the extent to which restaurants can source food from local growers. Restaurants owners and chefs, however, often have greater flexibility than retailers.

A telephone survey of full-service restaurants in the region was attempted in 2006. Time and resource constraints, combined with difficulties completing phone interviews with chefs and restaurant owners, created the need to generate estimates based on published statistics. For the 724 full-service restaurants in the region in 2002, annual sales are estimated as \$393.2 million.⁶⁵ According to the National Restaurant Association, the cost of food typically represents 33% of sales for the full-service category of restaurants, which means the amount of food purchased by those 724 restaurants would be around \$129.8 million.⁶⁶

Food spending varies considerably from restaurant to restaurant, but produce purchases represent an average of 9% of total food purchases for foodservice establishments.⁶⁷ That ratio is likely higher for full-service compared to limited-service restaurants. A conservative estimate of the amount of produce purchased by full-service restaurants in WNC, then, is \$11.7 million (9% X \$129.8 million = \$11.7 million).

Early Girl Eatery: Recipe for Success

John Stehling, co-owner of Early Girl Eatery in Asheville, explains his longstanding commitment to buying local in simple terms: "It's always been important to me to give back to my community. Working with local providers as much as I can is one way that I can do that." Although working with local farmers may be a personal choice for John and his wife Julie, it has certainly contributed to the substantial success of their restaurant, founded in 2001. The restaurant has been recognized nationwide for its fresh and healthy approach to Southern food made from scratch and for its support of local agriculture, and has remained one of the most popular restaurants in Asheville for many years. A growing local food movement in the region has made it easier for John to follow through on his instincts; his purchases of local products in all categories have increased since the restaurant's founding.



Read the full case study, page 2B

⁶⁵ 724 full-service restaurants = 43% of total restaurants in WNC (Source: Economic Census Retail Trade tables, 2002 Economic Census, US Bureau of the Census). Therefore we assume that full-service restaurant sales = 43% of total restaurant sales in WNC (43% X \$914.5 million = \$393.2 million).

⁶⁶ *Restaurant Industry Operations Report*. National Restaurant Association.

⁶⁷ Produce Marketing Association.

Demand for local produce through the restaurant market channel:

- **Current spending** is calculated as \$117,000, which represents 10% of produce purchases for 10% of full-service restaurants in the region. These are estimates and not actual reported spending (10% X 10% X \$11.7 million = \$117,000).
- **Desired spending** is calculated as \$760,500. This reflects an assumption that 25% of full-service restaurants have high interest in buying locally-grown food and includes an adjustment for the seasonality of production (p. 38). (25% X 26% X \$11.7 million = \$760,500)
- **Maximum spending** is calculated as \$3.0 million, which involves all of the region's full-service restaurants buying 26% of their produce from regional growers. (26% X \$11.7 million = \$3.0 million)

INSTITUTIONS

Institutions represent an important potential market channel for local growers because of the large volume of food they serve. Local food advocates around the country have worked with schools, hospitals, and prisons as a few examples, but there are many other possibilities. Four specific institutional markets – summer camps, public schools, colleges and universities, and hospitals – are explored here, each chosen for a particular reason that makes it a good potential market for locally-grown food in the region.

Summer Camps

Natural beauty and a mild climate contribute to a high concentration of summer camps in the region, among the highest concentrations in the nation. The camp season also coincides almost exactly with the growing season in the area, making summer camps a natural potential fit for locally-grown food. In the Spring of 2006 a survey of summer camps to explore the potential of these institutions as a market channel for

How does local food intersect with the tourism industry in WNC?

Tourism is one of the largest industries in North Carolina. The Travel Industry Association reported total tourism expenditures of \$13.3 billion in the state in 2004, up from \$12.6 billion in 2003.¹ The pastoral landscape and scenic views made possible by the region's farms are a major contributor to the industry. In total, one-third of the privately owned land in WNC is farmland.

There are also strong potential connections between farms and restaurants. "Food, drinks and meals" is the number one category of spending for visitors to WNC, including both overnight visitors and those visiting for just a day.¹ According to the International Culinary Tourism Association, tourists are increasingly interested in finding locally grown food in restaurants when they travel, and restaurants that cater to tourists are facing heightened pressure to feature fresh and unique ingredients. This creates good opportunities for local producers to sell farm products to chefs and restaurants.

locally-grown farm products was conducted.⁶⁸ A total of 49 summer camps were identified and surveyed. Twenty-three camps returned a survey for a response rate of 47%.

Twelve summer camps – nearly a quarter of all camps in the region – reported that they had purchased locally-grown farm products in previous years, at rates ranging from less than 1% to just over 15% of total food purchases. The actual dollar amount spent on locally-grown food in 2005 reported by camps completing a survey was between \$25,000 and \$30,000. In total, 30% of summer camps responding to the survey expressed high interest in purchasing locally-grown food.

Using food spending figures reported by 23 camps completing a survey (\$48,250 on average), total food spending for all 49 camps in the region is estimated at \$2.4 million. According to the Produce Marketing Association, produce typically represents 9% of total food purchases for foodservice establishments, which means that summer camps in the region purchase an estimated \$216,000 in produce each year.

Growth in this market should be achievable with some attention given to barriers and motivators reported by camps. The barriers to local purchasing given high ratings by summer camps include coordinating purchase and delivery of locally-grown food, product price, and finding growers with an adequate supply of local products. Motivators given the highest ratings include obtaining better tasting, fresher food; supporting local farmers; health benefits associated with fresher food; and supporting the local economy.

Demand for local produce through the summer camp market channel:

- **Current spending** for local food among summer camps is \$27,500 (Average of \$25,000 to \$30,000 reported by camps).
- **Desired spending** of \$51,840 represents the amount of produce interested summer camps (30% of camps) could purchase given improvements in local food distribution and infrastructure. Since summer camps only buy produce during summer months, an adjustment for *growing conditions* but not *seasonality* is necessary for this group. The corresponding adjustment has camps buying 80% of total produce from regional growers (see p. 38). ($30\% \times 80\% \times \$216,000 = \$51,840$)
- **Maximum spending** of \$172,800 assumes infrastructure improvements plus growth in demand and represents the maximum amount of produce all camps in the region could buy ($80\% \times \$216,000 = \$172,800$).

Public Schools

To determine the extent to which public school districts currently purchase locally-grown foods and to gauge regional interest in farm-to-school programming, a survey of Child

⁶⁸ *Summer Camps as a Potential Market Channel for Locally Grown Food in Western North Carolina*. 2006. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

Nutrition Directors (CND) representing public schools across WNC was conducted.⁶⁹ The survey was completed by 19 of 24 CND's for a response rate of 79%.

As a percent of total produce, the amount of locally-grown produce purchased by the five districts currently buying from local producers varied from 2% to 8%. Each of those CND's described their interest in expanding local purchasing, naming issues such as coordinating purchase and delivery and finding an adequate supply of local produce as barriers. Longer term, they acknowledged that growth will depend on resolving storage and delivery infrastructure challenges, such as the need for refrigerated trucks or warehouse space.

More than 70% of districts not currently purchasing local farm products scored their interest in doing so as "7" or higher on a scale from 1 to 10. The 24 districts in the region spend an estimated \$8.5 million on food each year.⁷⁰ Produce may represent 9% of that total, or \$765,000⁷¹ (9% X \$8.5 million = \$765,000).

Demand for local produce through the public school market channel:

- **Current spending** is \$19,000, which reflects actual spending reported by five districts for the 2005-2006 academic year.
- **Desired spending** of \$139,230 reflects local food purchases by interested school districts (70%) using the adjustment for seasonality described on page 38. Although public schools are not able to purchase many items that must be harvested during summer months, they are able to purchase other items (apples, cabbage, potatoes, spinach, e.g.) that can be stored well, harvested during the school year or grown successfully in greenhouses. (70% X 26% X \$765,000 = \$139,230)
- **Maximum spending** of \$198,900 equals 26% of total produce purchases by all 24 public school districts in the region. (26% X \$765,000 = \$198,900)

*Madison County Schools:
Another Link in the Chain*

Brenda Spence, Child Nutrition Director for Madison County Schools, started buying locally grown food fifteen years ago. It all started when a grower who had a hydroponic lettuce operation appeared in her office with lettuce in one hand and flowers in the other. He was growing for the Asheville restaurant market, had overproduced, and was trying to sell the rest of his lettuce. So she bought the lettuce for the schools – because, as she says, “How can you refuse a man with flowers in his hand?” Since then, local food purchasing by Madison County Public Schools has evolved into a much more organized process at a much higher level. With active support from the school board and growing involvement from school cafeteria workers, Brenda has turned her own personal commitment to local farmers into a countywide initiative with far-reaching effects on the farm and in classrooms. One of the most helpful parts of Brenda's buying system is a relationship she's developed with a cooperative group of Madison County farmers. By working closely with these farmers she is able to plan local purchases in advance of the school year and coordinate delivery in quantities that are practical for cafeteria workers to handle.

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⁶⁹ *Defining Success in the Farm-to-School Arena*. 2006. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

⁷⁰ This estimate is based on a formula using the number of students times the average lunch participation rate reported by each district times an average cost per meal of \$.92.

⁷¹ Produce Marketing Association.

Colleges and Universities

Colleges and universities have strong potential for local food campaigns because of student activism. Students often have high interest in issues related to buying locally-grown food, such as the environmental benefits associated with reduced food transport. To determine the extent to which WNC colleges and universities purchase or are interested in purchasing locally-grown food a survey of the 17 colleges and universities in the region was conducted. For the survey, 15 schools were interviewed by phone during the 2004-2005 and 2005-2006 academic years for a response rate of 88%.⁷²

During the study period, only three WNC schools reported purchasing local farm products, mostly fresh fruits and vegetables during the growing season. Another four schools expressed high interest in initiating local purchasing, suggesting the size of this market could increase substantially if efforts were taken to meet local purchasing needs of these institutions. Top concerns regarding local purchasing identified through the survey include product price, food safety issues, coordinating purchase and delivery, and locating an adequate supply of local products. As expected, perceived demand from students is a strong motivator for school foodservice directors to purchase locally-grown foods. More than that, however, foodservice directors completing the survey were motivated by a desire to support WNC farmers and the WNC economy.

In dollars, college food spending varies widely based on the type of foodservice provided, whether the school is privately or publicly funded, and how many students are enrolled. Using college food spending estimates from two different sources the following table was developed to estimate food spending by schools in this region:^{73,74}

	Estimated Average Annual Food Budget	Number in WNC	Total
2-year colleges	\$50,000	10	\$500,000
Small scale 4-year colleges (1,200 or fewer students)	\$500,000	4	\$2,000,000
Medium scale 4-year colleges (1,200 to 4,000 students)	\$1,000,000	2	\$2,000 000
Large-scale 4-year colleges (more than 10,000 students)	\$5,000,000	1	\$5,000,000
TOTAL	--	17	\$9,500,000

In the table, total annual spending on food by colleges and universities in the region is calculated as \$9.5 million. Produce purchases are a subset of that, estimated as \$900,000 or

⁷² Results from a Western North Carolina Farm-to-College Survey. 2006. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

⁷³ Farm-to-College Survey. Community Food Security Coalition (www.farmtocollege.org)

⁷⁴ Industry Census: Campus Dining Revenues. February 15, 2006. Foodservice Director Magazine.

% of the total based on a PMA estimate that 9% of foodservice food spending is for produce.⁷⁵

Demand for local produce through the college/university market channel:

- **Current spending** is calculated as \$18,450, based on an assumption that the three schools currently purchasing local are purchasing 10% of total produce from local producers. Actual figures are not available.
- **Desired spending** for local food in this market is calculated as \$169,000. This figure represents 26% of total estimated produce purchases for the seven schools that were either currently buying or interested in buying locally-grown food. (Since the average amount schools spend is variable depending on school size and structure, this figure involves a series of calculations.)
- **Maximum spending** among regional colleges and universities is calculated as 26% of total annual produce purchases for all schools in the region. (26% X \$900,000 = \$234,000)

Hospitals

Like summer camps, public schools, colleges and universities, hospitals are a natural fit for local food. With hospitals, providing more nutritious food choices falls within the overall mission of a health care facility to promote health and wellness. The growing number of health problems related to diet and nutrition in our country has brought national attention to these issues. Hospitals use a variety of approaches to incorporating locally-grown food into foodservice. Examples include purchasing local foods available through contracted suppliers, working within out-of-contract percentages to maximize local food purchases, offering expanding nutrition education regarding consumption of fresh fruits and vegetables, and operating farmers' markets on hospital grounds.⁷⁶

To determine the extent to which the 27 regional hospitals are interested in making connections with local farmers a survey of area hospitals was conducted in the summer of 2006. The survey, which consisted of phone interviews of hospital Foodservice Directors (FSD), was completed by 15 hospital FSD's for a response rate of 56%.

Overall, 6 of 15 (40%) hospital FSD's reported that they had purchased some locally-grown food in the past year, including items such as apples, sweet potatoes, and other unspecified fruits and vegetables. Those items were purchased only during the summer months and only in very small quantities relative to the total amount of food purchased, typically less than one percent. Even with differences in hospital size, whether or not foodservice was self-operated or contract managed, and whether the hospital was publicly or privately operated, there was a

⁷⁵ Produce Marketing Association.

⁷⁶ *Healthy Food, Health Hospitals, Healthy Communities: Stories of Health Care Leaders Bringing Fresher, Healthier Food Choices to their Patients, Staff and Communities.* May 2005. Institute for Agriculture and Trade Policy.

high degree of consistency among responses regarding interest in buying locally-grown food. Overall, 13 of 15 hospital Foodservice Directors (87%) expressed high interest in buying locally-grown food, measured as 7 or higher on a scale from 1 to 10.

Despite the high level of interest, Foodservice Directors gave high ratings to nearly every barrier named by interviewers. Not surprisingly, the highest rating was given to the category including contracts and company policies. Several Foodservice Directors emphasized that a contract – either with a vendor/distributor or an outside group purchasing organization – determined where and how they could purchase food. The health benefits of fresher food and perceived higher quality of local food were the two top-rated reasons for interest in buying locally-grown food.

The volume of food served by hospitals in the region is significant. The number of meals served by the 15 hospitals completing a survey ranged from 200 to 1500 per day. In terms of spending, 13 area hospitals reported combined food spending ranging from \$7 to \$8 million per year. Assuming similar spending from the 14 remaining area hospitals, total estimated food spending by regional hospitals would be around \$16 million per year. A rough estimate of produce spending as a proportion of that amount leads to an estimated \$1.28 million in produce purchases by area hospitals each year.⁷⁷

Demand for local produce through the hospital market channel:

- **Current spending** for this market channel is calculated as \$25,600, which represents 5% of produce purchases for 40% of area hospitals that reported purchasing small amounts of locally-grown food in the survey. ($40\% \times 5\% \times \$1.28 \text{ million} = \$25,600$).
- **Desired spending** is calculated as \$289,536, which represents 26% of total produce purchases for interested hospitals (87%), using the seasonality adjustment from page 38. ($87\% \times 26\% \times \$1.28 \text{ million} = \$289,536$)
- **Maximum spending** is calculated as \$332,800, which equals 26% of annual produce purchases for all 27 area hospitals. ($26\% \times \$1.28 \text{ million} = \$332,800$)

⁷⁷ Produce is estimated as 8% of total food purchased, based on information provided in the report: *Industry Census, The GPO Food Dollar*. Foodservice Director, November 15, 2006. www.fsdmag.com.

Chapter 4: Summary of Local Market Potential for Locally-grown Produce

Table 5 has been reprinted from page 34 of the report to summarize **current**, **desired** and **maximum** spending for local produce in large-scale markets in the region.

	Current Spending	Desired Spending	Maximum Spending
Full service groceries	\$5.1 million	\$13.5 million	\$17 million
Specialty food stores	\$100,000	\$234,000	\$936,000
Full-service restaurants	\$117,000	\$760,500	\$3.0 million
Summer Camps	\$27,500	\$51,840	\$172,800
Public Schools	\$19,000	\$139,230	\$198,900
Colleges/Universities	\$18,450	\$169,000	\$234,000
Hospitals	\$25,600	\$289,536	\$332,800
Total (wholesale spending)	\$5,407,550	\$15,144,106	\$21,874,500
Total (retail equivalent)	\$10,815,100	\$30,288,212	\$43,749,000

Source: Various surveys and other research described throughout this section.

The figures from Table 5 are carried over into Table 10 below to generate a single set of figures – combining Direct Sales with spending in large-scale markets – to describe the market potential for locally-grown produce.

Making detailed projections for Direct Sales is problematic because of limited data. As noted previously, USDA data on direct marketing of farm products is widely believed to be both inaccurate and incomplete.⁷⁸ One option is to use the rate of growth from the previous decade as the basis for projections. Direct Sales in the region doubled from approximately \$1.5 million to \$3.1 million between 1992 and 2002, which means that by 2012 they could be as high as \$6.2 million. Although this projection does not account for any flattening of the demand curve (i.e., the likelihood that demand will level out over time), it is reasonable because of expected population growth in the region. In other words, sustained population growth coupled with strong interest in local food means that growth in Direct Sales are likely to continue at a constant, not a declining, rate of growth.

In the framework that uses three levels of demand, \$6.2 million could correspond to **desired spending** since it includes some amount of projection but does not represent a maximum spending figure. It is beyond the scope of this report to calculate a maximum value or upper limit for Direct Sales, so \$6.2 million is listed again in Column 3 as a conservative value for **maximum spending** on local produce in direct market channels.

⁷⁸ *Direct Marketing Today: Challenges and Opportunities*. 2000. Agricultural Marketing Service, USDA.

Table 10: A Summary of Total Market Potential for LOCAL PRODUCE in WNC			
	Current Spending	Desired Spending	Maximum Spending
Total for selected categories of large-scale buyers (Table 5 – retail equivalent)	\$10,815,100	\$30,288,212	\$43,749,000
Direct Sales	\$3,100,000	\$6,200,000	\$6,200,000
Total	\$13,915,100	\$36,488,212	\$49,949,000

From the table, **desired spending** of \$36.5 million represents the retail amount of locally-grown produce WNC businesses and consumers could buy from local producers if changes were made to the way food moves from farm to market in the region.⁷⁹ That value does not reflect changes in tastes and preferences for local food but is calculated as the amount that businesses and consumers could spend based on their interest in local food right now.

Longer term, **maximum spending** of \$50 million represents the amount of spending that could occur if changes in tastes and preferences accompanied improvements to local food infrastructure and distribution systems. In other words, it reflects increased spending linked to increased interest in local food. It is calculated as the maximum amount that could be spent on local produce by the types of buyers examined in this report.

That amount of potential spending represents only a fraction – two percent – of the total \$2.6 billion of food spending by residents and visitors in the region. Subsequent sections of the report will add estimates for spending on meat, dairy and other processed farm products, which are generally higher priced items than fruits and vegetables. Despite the relatively small amount of potential spending on local produce, however, its significance lies in its ability to increase returns to individual farmers and generate additional economic impact to the region as a whole (see box).

⁷⁹ Specific issues involved in moving produce from farm to market are explored in the next section.

What is the potential impact of increased spending on locally-grown produce?

• **Potential for improving individual farm profitability**

Local markets have the potential to improve individual farm profitability. Farmers receive different returns depending on where and how they sell farm products. The highest returns are possible in direct markets where goods are sold to consumers at retail prices. In those cases, farmers earn 100% of the retail price of food. Beyond direct markets, farmers can earn as much as 50% of the retail price of food by selling directly to large-scale buyers. This reflects the assumption that wholesale prices equal approximately half of retail prices, an assumption driving many of the calculations in this report. In other cases, where farmers sell to intermediaries who then resell to local buyers, the farm value share would be somewhat less than 50%, possibly closer to the 25% average farm value share reported for sales of fresh fruits and vegetables in the larger national and global food system.⁸⁰ The following scenarios illustrate how different income streams can impact farmers:

Scenario 1: Farmers sell \$36.5 million worth of produce and earn 25% of the retail value of those sales, or **\$9.1 million**.

Scenario 2: Farmers sell \$36.5 million worth of produce – approximately \$6.2 million direct to consumers (100% farm value share) and the rest split evenly between sales directly to large-scale buyers (50% farm value share) and sales to intermediaries who resell to local buyers (assumed 25% farm value share) – and earn **\$17.5 million**.

Scenario 3: Farmers sell \$36.5 million worth of produce to local markets – approximately \$6.2 million direct to consumers (100% farm value share) and the rest directly to large-scale buyers (50% farm value share) – and earn **\$21.3 million**.

Any number of scenarios is possible. It is important to note that there are also cost implications for farmers selling to local markets. These involve changes in transaction costs, such as the time and effort involved in negotiating sales directly with large-scale buyers or time spent packaging and marketing food at tailgate markets. If transaction costs rise at the same rate as total revenues, the gain to the farmer of selling to local markets will be lost.

• **Potential for Expanded Regional Economic Impact**

The local multiplier effect (LME) is a term first used by economist John Maynard Keynes in his 1936 book *The General Theory of Employment, Interest and Money* to describe the way that dollars are recirculated within a local economy before leaving through the purchase of an import. According to the theory, \$36.5 million of spending on local farm products would add more than that to the local economy as local farmers re-spend the money on products and services in the local community. There are many factors which influence the number of times dollars are thought to recirculate, but LME's are commonly reported to range from 1.5 to 3.0. Within that range, the impact to the local economy of \$36.5 million in spending on local farm products would be \$55 million to \$109 million.

Where does \$36.5 million come from to purchase produce from local farms? If just half of WNC's families spend \$11 each week on locally-grown food for four months of the growing season, over \$36.5 million stays in the local economy helping sustain our family farms.

SECTION 3: Supplying Locally-grown Food to Local Markets

The previous section used spending as a proxy for demand. Potential spending on local food was calculated using different scenarios, first involving improvements in local food distribution and infrastructure and then involving infrastructure improvements plus higher levels of demand. This section uses food consumption estimates to look at demand in a different way. In this case the amount of food that is consumed represents total demand for food in the region. Comparing consumption and production of various types of food helps answer questions related to the capacity of the region's farms to supply local food to its residents. In particular, this section addresses questions such as:

- *How much of each type of food produced here is consumed here?*
- *Is there enough local supply to meet the corresponding level of demand for each type of food produced in the region? and*
- *What infrastructure is needed to supply different types of locally-grown food and farm products to local markets?*

The USDA Economic Research Service maintains three separate but related data series that each look differently at food consumption. The Food Guide Pyramid Servings dataset provides per capita consumption estimates of most categories of foods and includes adjustments for losses in weight that occur along the chain from farm to retailer/foodservice to consumer.⁸¹ Throughout this section, food consumption estimates for the region's consumers are based on this dataset, updated to reflect 2004 levels of consumption.

Talking about supply involves examining the infrastructure of food procurement and distribution.⁸² Beyond direct markets there is a complex, largely hidden system of how food moves from producers to consumers. From grower to consumer food often changes hands at least a dozen times⁸³, moving along a supply chain that links producers, packers, shippers, food manufacturers, wholesale distributors, food retailers, and consumers. In the modern industrialized agricultural system the farmer is no longer at the center of the production process. Farming is just one component of a complex system comprised of agricultural inputs, farm production, processing, distribution and consumption.

In this system, food companies ground their business practices in the logistics of supply chain management in order to streamline product procurement and facilitate greater bargaining power. Supply chain management strategies forge one-on-one (vertical) relationships between dominant food companies, formally linking producers, processors, wholesalers, and retailers.^{84,85} Meat processing firms increasingly contract with producers,

⁸¹ *Food Guide Pyramid Servings Dataset*. Last Updated December, 2005. NASS, USDA.

⁸² For a more thorough examination of these issues, see *The Infrastructure of Food Procurement and Distribution: Implications for Farmers in Western North Carolina*. 2007. The Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A).

⁸³ Kloppenburg, J. , J. Hendrickson, and G. W. Stevenson. *Coming into the Foodshed*. 1996. Agriculture and Human Values 13:33-42.

⁸⁴ Kaufman, P. *Consolidation in Food Retailing: Prospects for Consumers & Grocery Suppliers*. 2000. Economic Research Service, USDA.

for example, to provide them with livestock. Large producers want the certainty that comes from dealing with a guaranteed market and processing firms want a guaranteed supply to keep their operations running efficiently. Supply chain management activities link the value chains that transform raw materials and components into finished products for consumers.

Retailers and suppliers are also becoming increasingly interdependent. The growing dominance of large grocery retailers in the food system in recent years has especially engendered a shift in the mechanics of food distribution.⁸⁶ As retailers grow through mergers and acquisitions, they develop their own vertically integrated distribution systems with large food manufacturers and producers. The growing prominence of self-distributing retailers, which manage their own trucking fleets, warehouses, and buying offices, impacts the viability of wholesale markets where retailers traditionally purchased their supplies. Retailer fees (i.e., advertising and failure fees and slotting allowances where suppliers pay for the privilege of stocking their products on shelves) marginalize smaller farmers and smaller scale food businesses unable to assume additional costs.^{87,88} As food manufacturers vie for bargaining power with large food retailers, small and mid-size processors are absorbed into an increasingly smaller number of firms.⁸⁹

As with large food retailers, foodservice businesses seek efficiency gains and lower procurement costs by doing business with fewer numbers of suppliers. Broadline wholesalers, which carry a full range of food and nonfood products, account for 50 percent of foodservice distribution sales.⁹⁰ Broadline wholesalers offer foodservice customers one-stop shopping and a comparative price advantage on a full line of inexpensive food and nonfood products from paper supplies and dishwashing detergent to bulk food items like flour and rice, fresh produce, meats, and thousands of heat and serve items.⁹¹

This section examines the supply of local food in the context of this food distribution system. For each type of food produced in the region it explores production levels as well as issues involved in getting local food into local markets. The section differs from the previous section in one other important way. Whereas Section 2 was limited to describing current and potential demand for fresh produce, this section takes a broader perspective. It includes information about produce, meat, dairy products and other items produced in substantial quantities by the region's farms. At the end of the section more projections are made. This time, instead of a focus on fresh fruits and vegetables, the summary table details projections for all the major types of food produced in the region.

⁸⁵ Hendrickson, M., and W. Heffernan. *Concentration of Agricultural Markets*. 2005. Department of Rural Sociology, University of Missouri.

⁸⁶ Ibid.

⁸⁷ Halweil, B. *Home Grown: The Case for Local Food in a Global Market*. 2002. Worldwatch Paper 163: Worldwatch Institute.

⁸⁸ Hendrickson et. al. 2005.

⁸⁹ Harris, J. M., P. Kaufman, S. Martinez, and C. Price. *The U.S. Food Marketing System, 2002. Competition, Coordination, and Technological Innovations into the 21st Century*. 2002. Economic Research Service, USDA.

⁹⁰ Harris et. al. 2002.

⁹¹ Boser, U. 2007. *Every Bite You Take: How Sysco Came to Monopolize Most of What You Eat*. Slate.com. Electronic document, <http://www.slate.com/id/2138176>, accessed February, 20, 2007.

Chapter 1: Fruits and Vegetables

Table 11 shows the top fruit and vegetable crops in the region. Acreage data should be viewed with caution. In some cases the USDA suppresses county-level data, for example when production is limited or only one or two farms report growing a particular crop. In other cases reported acreage may be higher than actual acreage because of formulas used by the USDA to create county profiles based on limited information.

Vegetables	Acres	Fruits	Acres
1 Snap beans	3114	1 Apples	7502
2 Cucumbers/pickles	875	2 Grapes	174
3 Tomatoes	847	3 Peaches	145
4 Sweet corn	665	4 Berries (all types)	114
5 Pumpkins	275		
6 Squash	211		
7 Peppers (bell, chile)	203		
8 Cabbage	153		
9 Watermelons	75		
10 Broccoli	26		

Source: USDA Census of Agriculture, 2002

All of the crops in Table 11 are also consumed in significant quantities in WNC. Table 12, beginning with Column 1, shows consumption estimates in millions of pounds for selected fresh fruits and vegetables. Column 2 shows acreage needed to grow those amounts, and Column 3 shows how many acres are devoted to growing the crops in the region. Even with

	Column 1: Million pounds consumed in WNC	Column 2: Acres needed to produce that amount	Column 3: Acres devoted to the crop in WNC, 2002
Apples	19	785	7502+
Asparagus	1.1	334	3+
Beans (Snap)	1.9	380	3114+
Blueberries	0.5	119	23+
Broccoli	5.9	398	26+
Cabbage	8.3	376	153+
Carrots	8.8	267	1+
Cauliflower	1.6	10	n/a
Corn (Sweet)	9.2	813	665+
Cucumbers	6.5	564	875+
Grapes	7.9	2915	174+
Lettuce (Head)	21.2	598	2+
Lettuce (Romaine)	11.4	352	1+
Peaches	5.1	1223	145+
Peppers (Bell)	7.0	535	168+
Potatoes	45.8	1229	n/a
Spinach	2.0	140	1+
Strawberries	5.5	440	21+
Tomatoes	20.1	609	847+
Watermelons	13.0	764	75+

Sources: (Column 1) USDA Food Guide Pyramid Servings dataset; (Column 2) National and state average yield data, various sources; (Column 3) USDA Census of Agriculture, 2002, Geographic Series.

+ = minimum

incomplete data, what is clear from Table 12 is that there is significantly more demand (consumption) than supply for nearly every type of fresh fruit and vegetable grown in the region. Achieving a level of supply equal to the level of consumption in this region – essentially matching Column 3 with Column 2 in the table – is not realistic because it assumes year-round production of fresh fruits and vegetables. Rather, there is some point between Columns 2 and 3 that represents a reasonable target for local production in a fully mature local food system. Without sophisticated analysis of soil, climate, and growing conditions it is beyond the scope of this report to say exactly where that point is for any particular food.

Apples, tomatoes, snap beans, and cucumbers are the only crops for which regional production outpaces regional consumption. Interestingly, those are also four of the top processed fruits and vegetables consumed in the region, which means that improving growers’ ability to process fruits and vegetables for local sale may be one way to expand local consumption of local farm products. Identifying the processed products as local is critical if producers are to receive any premium associated with the food being locally-grown.

Table 13: Consumption of Selected Categories of Processed Fruits and Vegetables in WNC	
	Consumption (million pounds)
Processed fruits	
Canned apples/applesauce	4.5
Canned peaches	3.6
Apple juice	2.9
Frozen berries	2.9
Canned pears	2.5
Grape juice	.5
Other processed fruits	17.3
Processed vegetables	
Canned tomatoes	70.4
Canned cucumbers (pickles)	4.6
Snap beans	3.7
Canned carrots	1.2
Other canned vegetables	22.4
Frozen vegetables	77.6
Dehydrated vegetables	14.9

Source: USDA Food Guide Pyramid Servings dataset

The NC Apple Growers Association reports that approximately 40% of apples grown in the state are currently sold fresh and 60% are sold for processed products such as applesauce and juice. Table 13 provides no additional information about production of processed fruits and vegetables in the region because little is known about which foods are processed locally by the region’s growers and in what quantities. There is no central data source – like the Census of Agriculture – for detailed information about processing of farm products. What Table 13

does show is that many items grown in the region are also consumed in large quantities here in processed states.

Processing options for fruit and vegetables within the local food system range from small-scale arrangements like using one of the region's shared-use facilities to large-scale operations which are typically run by corporations. Shared-use facilities provide food entrepreneurs a relatively inexpensive way to license food processing activities; setting-up a commercial kitchen that meets specific federal and state health regulations can be expensive. These small scale processing facilities also create opportunities to expand local food sales through direct markets – particularly to tourists – but they may not be practical for high volume producers.

Large-scale processing used to be widely available in the region, though most facilities are now closed. At least two large-scale juice processors are still operating. Although both processors are currently importing concentrated juice, they provide opportunities for expanding local fruit processing. More research is needed to explore producer interest in local processing, recognizing that growing for processing is in many ways distinct from growing for fresh markets.⁹²

The disparity between production and consumption of fruits and vegetables would be magnified if there were a way to calculate consumption of those same foods by the millions of visitors to the region each year. The best estimate for the region is that there are 21.5 million visits to WNC annually, most of which occur during summer and fall – peak times for harvesting fresh produce in the region. Compared to estimated resident spending at restaurants of approximately \$693 million, visitors have been estimated to spend anywhere from \$363.9 million to \$418.4 million at eating and drinking places in the region.⁹³

Distribution and Infrastructure Issues for Produce

On its way to consumers, produce moves through three primary marketing channels: grower-shippers, wholesalers, and retailers.⁹⁴ In addition to handling their own produce, grower-shippers may also handle produce from other farmers.

Mountain Food Products: Serving the Local Community

Ron Ainspan has operated Mountain Food Products, an Asheville-based food distributor, for twenty years. He began the business with a strong local focus, and over the years has remained committed to supplying the Asheville community with quality food that is as local as possible. As a food purchaser, he respects the value of locally produced foods and wants to contribute to the local farming community. As a seller, he must provide his customers with produce that is at a consistent level of quality, packaging and appearance throughout the year. Ron straddles the divide between growing demand for local products and limited seasonal supply. The small and local scale of Mountain Food Products allows Ron to communicate directly with his suppliers and customers and to pass on detailed information about the origins of the products he offers. This creates a unique opportunity to maintain the identification of locally grown food through the value chain from producer to distributor to retailer and consumer using the Appalachian Grown™ certification system.

Read the full case study, page 14B

⁹² Lucier, G., S. Pollack, M. Ali, and A. Perez. *Fruit and Vegetable Backgrounder*. 2006. Economic Research Service, USDA.

⁹³ See page 31 for an explanation of the figures cited in this paragraph.

⁹⁴ Handy, C. R., P. R. Kaufman, K. Park, and G. M. Green. *Evolving Market Channels Reveal Dynamic US Produce Industry*. 2000. FoodReview 23:14-20.

They own the packing sheds that assemble, wash, and pack produce and perform the post-harvest handling and packing activities that contribute to the final cost of fresh produce at the retail level. From grower-shippers, produce moves to wholesalers, self-distributing retailers and foodservice companies.

Wholesalers, the next vertical stage in produce distribution, can be merchant wholesalers or brokers.⁹⁵ In moving produce from grower-shippers to various retail outlets, merchant wholesalers take title of the product they handle; brokers, while also serving as intermediaries for grower-shippers or for wholesale or retail buyers of produce, do not take ownership of the produce. The majority of wholesalers are merchant wholesalers, which include broadline grocery wholesalers, broadline foodservice wholesalers, and specialized fresh fruits and vegetables wholesalers. In serving retail stores and foodservice establishments, specialized produce wholesalers deal exclusively with fresh fruits and vegetables.

Broadline grocery and foodservice wholesalers procure a wide range food as well as nonfood products. Grocery wholesalers serve individual stores or grocery chains that do not operate their own produce buying offices, warehouses, or trucking fleets. Foodservice wholesalers procure products specifically for foodservice establishments including restaurants, hospitals, hotels, and schools. Foodservice wholesalers are handling an increasing share of produce moving through market channels, reflecting growth in the foodservice industry along with growth in demand for convenience foods.⁹⁶

At the same time, the role of food wholesalers as mediators between manufacturers and retail food stores is on the decline. Today, more produce is shipped directly from grower-shippers to large retailers that operate their own distribution centers. These self-distributing grocery retailers, which also have their own buying offices and trucking fleets, circumvent wholesalers and forge direct supply agreements with grower-shippers.⁹⁷

*Shelton Farms: Finding a
Space in the Middle of
Agriculture*

With eight greenhouses in full hydroponic lettuce production, Shelton Farms produces roughly 10,000 to 12,000 heads of bibb lettuce per week. This places the farm in a size bracket that is beyond that of most farms in the region, and means that the farm's production exceeds the capacity of local direct markets. On the other hand, this scale of is not large enough for the farm to rely on national commodity markets. Owner William Shelton finds himself caught between two potentially successful marketing strategies, neither of which can fully accommodate his farm.

William utilizes a complex network of local and national distributors to get his lettuce into both national and local stores. By growing specialty products of high quality that can bring a premium price, building strong personal relationships with buyers and distributors, and being flexible in his packaging, William has successfully crafted a space for his products in a system that is providing infrastructure and marketing challenges to farms of his size across the country.

Read the full case study, page 10B

⁹⁵ Ibid.

⁹⁶ Davis, D. E., and H. Stewart. *Changing Consumer Demands Create Opportunities for U.S. Food System*. FoodReview 2002:19-23

⁹⁷ Handy et al. 2000.

WNC producers can access niche markets by selling directly to consumers or in some cases by delivering directly to small and independently-owned retail outlets that retain the flexibility to buy directly from producers. Market segments that have embraced supply chain management practices—larger grocery store and restaurant chains and institutional buyers, for example—pose the greatest challenges to the small and mid-size producers that dominate farming in the region. The ability of farmers to access these markets depends on a retailer's system of procurement and distribution and the ability of farmers to satisfy volumes and price points, desire for year round produce, and post-harvest handling and packaging requirements. In addition, the use of centralized warehousing systems for distribution among chain outlets limits the ability of individual farmers to deal directly with individual restaurants or grocery stores.

Regionally-based systems of food procurement and distribution hold the potential to help local farmers overcome market constraints. With increasing demand for local food, these systems are potential points of intervention that with further development could create space for smaller local farmers in a tightly integrated market.

What are some points of intervention for expanding local markets for produce in WNC?

Backhauling

To maximize fleet utilization on return trips and expand the spectrum of product movement, self-distributing retailers that operate their own buying offices and own refrigerated trucking fleets are able to pick-up produce from farmers for further distribution to individual store locations. This process is known as backhauling. In WNC, Ingles Markets operates a limited backhauling program in which produce from two mid-size farmers in the region are trucked to the company's distribution warehouse in Black Mountain, NC for further distribution to each Ingles store.

Pooling of production

Locally-based packing houses, wholesale distributors and farmer cooperatives all allow for pooling of production, which gives smaller local farmers the ability to capture marketing and distribution advantages that come with larger scale. Wholesalers and packing houses, accustomed to marketing fresh produce, have the knowledge needed to meet the specifications of particular market segments and the infrastructure to cool, grade, package, and transport local farm products to different locations. As models of distribution, packing houses and wholesale operations also have the ability to meet the desire of local buyers for year round supplies because, in addition to handling local product, they also handle the produce of growers from other parts of the country. Labeling is critical in these situations as a way to differentiate local products and ensure that farmers receive any premium associated with the food being locally grown. Farmer cooperatives increase individual farmers' collective power. By pooling resources and sharing marketing, transportation, and distribution costs, cooperatives have the potential to help farmers overcome market constraints associated with the lack of post-harvest handling and packaging equipment and adequate transportation to deliver to different markets. In WNC, a number of farmer cooperatives have formed to obtain equipment needed to meet the standards of different market segments and reach institutional markets like hospitals and school cafeterias and larger grocery retail chains.

The WNC Farmers' Market

The WNC Farmers' Market represents a substantial piece of infrastructure for farmers in the region who wish to sell their products locally. The market is one of five farmers' markets owned by the state of North Carolina and operated by the North Carolina Department of Agriculture and Consumer Services (NCDA&CS). The WNC Farmers' Market is a marketing hub. Farmers have opportunities for large and small scale, direct sale and wholesale and year-round marketing of farm products. On the WNC Farmers' Market site farmers can sell direct to consumers or to small food related businesses. Farmers can also sell wholesale to vendors that maintain a space in the retail section of the market and to packers, wholesalers, and farmer cooperatives that maintain wholesale spaces to sell to grocery stores, restaurants, institutions, and roadside markets. Again, adequate labeling of local food is the only way buyers will be able to act on their preferences for locally grown food and farm products. Currently, a large percentage of the produce that moves through this facility comes from farms outside of WNC.

Chapter 2: Meat and Poultry

Meat and dairy production is the largest segment of the U.S. agriculture economy. In 2004 livestock, poultry and dairy receipts totaled \$123.5 billion nationally compared to \$117.8 billion in receipts from all crops. In North Carolina, those figures were \$5.4 billion and \$2.9 billion, respectively. In WNC, receipts from meat and dairy products totaled \$293.7 million – 54% of all cash receipts from farming – and all other crops earned \$249.3 million.⁹⁸ In general, meat and dairy products earn higher prices than other crops because of higher costs of production, not because they are inherently more profitable. Given substantial differences in infrastructure for local meat and dairy production, this chapter focuses on meat production and distribution and the next chapter focuses on dairy products.

Table 14 offers a comparison of production and consumption data for meat in the region. The figures reported for beef and chicken production do not accurately reflect the type of local production that is available for local consumption. In the case of chicken, for example, more than 90% of all broilers produced in the region are in Wilkes County, where Tyson Foods™ operates three processing facilities. The broiler industry is heavily vertically integrated, which means that one firm (in this case Tyson Foods™) provides everything from processing to packaging to marketing the meat. Many poultry producers in Wilkes County are likely contract growers for Tyson Foods™. The actual amount of chicken that is processed either on-farm or in independent processing facilities and sold locally is probably far less than the 98.4 million pounds consumed in the region.

	2004 Consumption (million pounds)	2004 Production (million pounds)
Beef	161.5	63.5
Chicken (broilers)	98.4	629.4
Pork	94.1	1.5
Lamb	65.6	n/a
Turkey	17.0	<.01

Source: The figures in the table are based on a series of calculations combining data from the 2002 USDA Census of Agriculture and the Agriculture Statistics division of the NCDA&CS.

Of the approximately 63.5 million pounds of beef produced in the region, only a very small amount of beef is actually finished and processed in the region and marketed locally. Producers who do sell locally often raise grass-fed or grass-finished beef using independent processing facilities and sell their product on-farm, at area farmer tailgate markets, or through local retail and restaurant grocery outlets. This is distinct from meat sold in traditional commodity markets. The beef supply chain is described in detail in the breakout box below.

⁹⁸ USDA Census of Agriculture, 2002.

How does beef move from farm to market in the global food system?

The beef supply chain encompasses cow-calf operations, feedlot operations, packing plants and processors, wholesale distributors, and retailers and foodservice operators. The process begins with cow-calf production. In this kind of operation, the product is the calf. Cow-calf producers breed animals and raise them on range or open pasture land for up to one year. From there, calves are sold to other beef cattle operations.

When cattle have reached a suitable weight, “feeder” weight, they are sold through livestock auction markets in different locations, which transfers ownership to feedlot operators. Most calves go to feedlot operations located in the Midwest, the Southwest, and the Pacific Northwest where there are abundant supplies of grain to continue feeding the calves. In feedlot operations cows are finished in three to six months, weighing between 1000 to 1200 pounds. Some calves, before going to feedlot operations, may be backgrounded. Backgrounder calves are lighter in weight and are purchased by “stockers” another type of intermediary that puts calves on pasture until they are ready to go to feedlots.

Feedlots have or own marketing arrangements with meat packing plants. Once cattle have reached slaughter weight they are purchased by the plants. Packing facilities process the animals and sell them to retailers and foodservice operators by means of intermediary wholesale distributors. Some plants sell to other intermediary processors for further processing before the products are sold to retailers and foodservice operators.

With the long chain from farm to table involving multiple intermediaries, the farm value share of meat sold in commodity markets is relatively low. Most recently, the farm value share for meat was reported as 31%, which means that farmers earn 31 cents of every retail dollar of beef sold in commodity markets.⁹⁹

-- Source: National Cattlemen’s Beef Association.

Distribution and Infrastructure Issues for Meat

Meat producers in the region currently have three options for selling their products. The first involves raising animals and then selling to an intermediary who arranges for processing and sale. Producers selling meat in this way are susceptible to the cycles of supply and demand that determine commodity pricing.

A second option is to have the meat processed in an independent, government-inspected facility. With this option the farmer maintains control over where the product is sold and may be able to earn a premium by selling in local markets. The absence of independent meat processing facilities in the region means that farmers wishing to have their meat processed in this way must travel long distances to do so. Additional costs (time and money) associated with travel for processing makes this an unattractive option for many producers.

A third option for meat and poultry producers involves on-farm processing. State guidelines limit the number of small animals that may be processed on-farm to 1,000 chickens or rabbits or 250 turkeys per year per farm, which means that this option is not practical for large- or even medium-scale producers. For large animals, on-farm processing is not practical given

⁹⁹ *CPI, Consumption and Prices Briefing Room.* Economic Research Service, USDA.

the strictness of the regulations for becoming licensed to process those animals. On-farm processing guidelines vary from state to state and some states carry less restrictive guidelines than NC.

Overall, there is tremendous potential for expanding local markets for locally produced meat and poultry based on the small amount that is currently being processed and sold locally. There is also growing demand for naturally raised meat and poultry by health conscious consumers and those concerned with animal welfare.^{100, 101} Much of the land in WNC is suited for grazing, and regional cow-calf producers, motivated by local consumer interest, are exploring the possibility of expanding into the grass-fed beef market. A separate group is exploring the feasibility for establishing a regional, independent USDA-inspected small animal processing facility for processing poultry and rabbit meat.¹⁰²

Access to a government-inspected processing facility is the principal infrastructure obstacle for any type of meat, but grass-fed and -finished beef also requires land for pasture, on-farm animal handling facilities and adequate cold storage for processed meat products. To shift into this type of production, cow-calf producers would need to learn and adopt new practices including, for example, more closely managed grazing and pasture management.

Chapter 3: Dairy Products

Table 15 shows that an estimated 253.8 million pounds of milk were produced in the region in 2002. Some portion of that amount is marketed as fluid milk and some is used to make cheese and other processed dairy products. No information is available from government sources detailing the end uses of milk produced in the region.

	Consumption (million pounds) 2004	Production (million pounds) 2002
Fluid milk	192.3	253.8 *
All cheese	28.9	n/a
All frozen dairy	26.4	n/a
Yogurt	9.2	n/a
Butter	4.6	n/a

*Production data for milk is derived from USDA Census of Agriculture data (14,287 milk cows in WNC in 2002) combined with production statistics provided by NCDA (17,766 average pounds of milk per cow in NC in 2002).

Large scale local cheese production in WNC occurs primarily through the Ashe County Cheese Store, which produces around 2.3 million pounds of cheese per year. Some small

¹⁰⁰ Freeman, S. *Livestock Farms Grow in W Mass.* 2007. The Republican online, <http://www.masslive.com/springfield/republican/index.ssf?/base/news-1/117308602410530.xml&coll=1>

¹⁰¹ Ness, C. *Au Revoir to Foie Gras: Wolfgang Puck is Biggest Name Yet to Ban Delicacy from His Restaurants' Menus.* 2007. www.SFGate.com.

¹⁰² More information available from the Center for Assessment and Research Alliances, Mars Hill College.

dairy farmers have focused on reaching niche markets with production of value-added products like artisan cheese, yogurt, butter, and frozen dairy products, though the total amounts produced are very small. These producers typically sell directly to consumers at tailgate markets or on-farm stores or by delivering directly to restaurants or local retail grocery outlets.

Based on the estimated amount of raw milk needed to produce fluid milk and cheese it would take approximately 381.3 million pounds of milk to meet the region's demand for those two products alone.¹⁰³

Distribution and Infrastructure Issues for Dairy Products

Dairy farms are more specialized than other farm operations and accordingly have particular equipment and facility needs. They require facilities to milk cows and to store and cool milk, and they need equipment to test milk for antibiotics, bacteria, and somatic cell counts before it is picked up by milk haulers. Dairy farmers also tend to have fewer sources of off-farm income than other farmers, making them more dependent on farm-generated income. Taken together, these factors make dairy farms particularly susceptible to price volatility, which has been severe in the industry in recent years.¹⁰⁴

Dairy farming is also unique because milk is marketed cooperatively within the framework of a federal program for milk marketing.¹⁰⁵ The Federal Milk Marketing Order program is designed to stabilize market conditions and benefit both producers and consumers. The program assures that dairy farmers receive a reasonable minimum price for their milk throughout the year; all producers in a particular market order are paid a blend or pool price based on total market uses of milk including fluid sales and other dairy products. For consumers, the program guarantees an adequate supply of milk and helps prevent wide price fluctuations during periods of heavy and light milk production.

Dairy farmers in the region typically belong to one of three marketing organizations: Dairy Farmers of America, a national cooperative; Piedmont Milk Sales Inc., a milk broker; or a regional cooperative, the Maryland and Virginia Milk Producers Coop. Fluid milk or cheese processors contract directly with these marketing organizations for much larger amounts of milk than any individual farmer could provide. When there is a shortage of milk availability in the region (due to seasonal fluctuation in production levels, for example) milk is imported from other areas of the country. The cooperatives pay part of the transportation costs for the imported milk, which reduces the price that the dairy farmer members receive.

Dairy farming in WNC, as in other regions, is mainly a family operation. Of 68 regional dairy farmers completing a survey in 2006, 100% identified their farms as family farms.¹⁰⁶

¹⁰³ The Ashe County Cheese Store estimates that approximately 100,000 pounds of fluid milk are used to make 10,000 pounds of cheese.

¹⁰⁴ Miller, J. J., and D. P. Blayney. *Dairy Backgrounder*. 2006. Economic Research Service, USDA.

¹⁰⁵ *Federal Milk Marketing Orders*. Agricultural Marketing Service, USDA.
www.ams.usda.gov/dairy/orders.htm.

¹⁰⁶ *A Survey of Licensed Dairies in Western North Carolina*. 2007. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

More than 90% also reported that their family had been operating the dairy for 30 years or more. Given this long history of dairy farming in the region, the fact that more than a third of survey respondents indicated they might not be able to continue operating the dairy for long is alarming. Reasons given by farmers for the likelihood of selling or closing down their dairy operation included extremely low prices paid for milk and pressure from developers interested in buying their land.

A decrease in the number of dairy farms in NC from 1,139 in 1985 to 350 in 2005 indicates that dairy farming in the state is in a significant period of decline.¹⁰⁷ In part these numbers also reflect consolidation and concentration that has occurred in the dairy industry in recent years. From 1970 to the early 2000s, for example, the number of dairy operations in the U.S. decreased from about 650,000 operations to about 90,000, and average herd size increased five-fold from 20 cows to 100 cows.¹⁰⁸ In WNC most dairy farms are relatively small. More than three quarters of dairy farmers surveyed in the region reported average herd size of fewer than 200 cows, and only one could be considered very large, reporting an average of 800 cows in inventory.¹⁰⁹

The infrastructure for large-scale milk processing and distribution still exists in WNC. MilkCo, an Asheville-based milk processing and packaging plant, produces 53 million gallons of milk annually – approximately 450.5 million pounds. – using a combination of milk from WNC dairies and dairies in other parts of the Appalachian Federal Milk Market Order and from milk imported from other regions. Milk processed at MilkCo provides Ingles Markets with nearly all of its fluid milk needs. A rough estimate is that 80% of the fluid milk processed at MilkCo comes from regional dairies and the remaining amount is imported from other regions.¹¹⁰ The Ashe County Cheese Store uses approximately 23 million pounds of milk annually to produce 2.3 million pounds of cheese, again using mostly milk from regional dairies in combination with milk imported from other regions.¹¹¹

Linking regional milk production with regional milk consumption is complicated by the fact that local milk and imported milk are pooled during processing. While 85% of WNC dairy farmers surveyed answered yes when asked whether they could benefit from a labeling or promotional program identifying their milk as locally produced, the logistics of such a program are complicated. More research is needed to determine whether such a program would be feasible and cost-effective.

According to producers, organic milk production is not practical in the region right now. This is important because of growing demand for organic milk nationwide and the possibility that farmers could earn a premium by selling milk certified as organically produced.¹¹²

¹⁰⁷ Agricultural Statistics Division, North Carolina Department of Agriculture & Consumer Services.

¹⁰⁸ Miller and Blayney. 2006.

¹⁰⁹ *A Survey of Licensed Dairies in Western North Carolina*. 2007. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

¹¹⁰ Personal communication, Buddy Gaither of MilkCo.

¹¹¹ Personal communication, Ashe County Cheese Store.

¹¹² Dimitri, C. and C. Greene. *Recent Growth Patterns in the U.S. Organic Foods Market*. 2002. Economic Research Service, USDA..

The cost of grain and the lack of availability of organic grain were the top two barriers rated by survey respondents regarding organic milk production.¹¹³ Other barriers given high ratings include (in order) the expense of transitioning, the certification process, and concerns about the health of the herd. Overall, only four dairies completing a survey expressed interest in producing organic milk.

Chapter 4: Other Food

There are other types of food not included in previous chapters that are produced in relatively large quantities in the region. North Carolina ranks second in the nation in trout sales, for example, most of which occur in WNC. Forty-seven commercial trout operations in the state sold \$7.2 million worth of trout in 2006.¹¹⁴

Wine production may also be significant, though detailed figures for WNC wine production are not available. Since 2000, North Carolina's grape acreage has more than doubled to 1300 acres in 350 vineyards. In the same period total grape production increased by more than 70%, enabling North Carolina to become both the 10th largest wine producer and 10th largest grape producer in the US.¹¹⁵ The total value of wine production in the state was estimated at \$34 million in 2005.¹¹⁶ With 12 of 62 wineries in the state located in WNC, wine production in the region can be estimated at around \$6.8 million (19% of state total).

Closely related to poultry production, an estimated 2.5 billion eggs were produced in North Carolina in 2002 for a value of \$228.7 million.¹¹⁷ In WNC, those figures were 144.8 million eggs and \$13.2 million in 2002. That compares to 254 million eggs that are consumed in the region annually.

Each of those products – and some others which are not highlighted – makes an important contribution to the region's overall food and farm economy. Distribution systems for those products are different enough from other products covered in this section that they are excluded from chapters 1 through 4. While limited staff time and resources prevented thorough exploration of the potential for expanding local markets for trout, wine, and eggs, future food system research should include more information on those products.

Chapter 5: Summary of Local Market Potential for Locally-grown Food

This chapter relies on the same type of analysis used to describe demand for produce in Section 2, but the focus is broadened to encompass all categories of food produced in the region. Projections are made for local food spending by similar categories of organizations used in Section 2 – retail food stores, full-service restaurants, summer camps, public schools,

¹¹³ *A Survey of Licensed Dairies in Western North Carolina*. 2007. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

¹¹⁴ *Agricultural Statistics*. 2005. NCDA&CS.

¹¹⁵ *Economic Impact of North Carolina Wine and Grapes*. 2007. MKF Research: St. Helena, CA.

¹¹⁶ NC wine production statistics and winery information obtained from www.ncwine.org.

¹¹⁷ *Agricultural Statistics*. 2005. NCDA&CS.

colleges, universities, and hospitals – which in turn supply most of the \$2.6 billion worth of food consumed by the region’s residents and visitors.

Positioning these projections at the end of this section is a way to acknowledge that they depend on major changes to the food production and distribution system. More than 7,000 farms in the region produce some meat and dairy products, yet in the current food system these products are available to local markets only in very limited quantities. These projections imply substantial changes to infrastructure and distribution systems but are grounded in that they are based on measured demand from consumers, businesses and institutions.

As in the summary table at the end of Section 2, the three columns in Table 16 (next page) represent different types of spending: **current spending**, which is estimated to reflect actual spending on locally-grown food; **desired spending**, which equals the amount interested organizations could buy given availability and improvements to local food distribution and processing infrastructure; and **maximum spending**, which reflects improvements in infrastructure plus changes in tastes and preferences such that every organization in each category has high interest in buying locally-grown food.

Table 16: A Summary of Larger Scale Markets for LOCAL FOOD in Western North Carolina			
	Current Spending	Desired Spending	Maximum Spending
Full-service groceries	\$5.4 million	\$189.2 million	\$236.6 million
Specialty food stores	\$105,000	\$3.3 million	\$13.2 million
Full-service restaurants	\$122,850	\$13.0 million	\$51.9 million
Summer Camps	\$28,875	\$336,000	\$1.1 million
Public Schools	\$19,950	\$2.4 million	\$3.4 million
Colleges/Universities	\$19,373	\$1.6 million	\$4 million
Hospitals	\$26,880	\$5.6 million	\$6.4 million
Total (wholesale spending)	\$5,722,928	\$215.4 million	\$316.6 million
Total (retail equivalent)	\$11,445,856	\$430.9 million	\$633.2 million

- **Column 1** includes current spending on local produce from Section 2 plus an additional 5% to account for small amounts of processed fruits and vegetables, meat, cheese, eggs, and other locally produced foods that are currently sold to local markets. Actual spending on locally produced milk is likely much higher than these amounts because of the significant infrastructure for producing local milk that exists in the region. In total, the region’s residents consume an estimated \$30.2 million worth of milk.¹¹⁸
- **Column 2** is the estimated amount of local food interested organizations would buy if they could get as much as they wanted. The level of interest and dollar amount of total food spending for each group is detailed in Section 2. A new assumption here is that interested buyers could spend 40% of their total annual food budget on locally-grown

¹¹⁸ This calculation is based on total milk consumption of 192.3 million pounds in the region and average milk prices between 2001 and 2005 of \$15.68 per hundred-weight (NCDA, Ag Statistics Division).

foods. This figure is based on two unrelated pieces of information about the breakdown of food spending. First is that consumers spend an average of 45% of their annual food budget on foods that could be produced by the region's farms – fresh and processed fruits and vegetables, meat, poultry, eggs and all types of dairy products.¹¹⁹ Second is that on behalf of at least some types of large-scale buyers, Group Purchasing Organizations (GPO's) spend roughly 40% of their total annual food budget on meat, fresh produce, milk, eggs, cheese and processed fruits and vegetables – again, nearly all of which could be produced locally.¹²⁰

- **Column 3** represents an upper limit or maximum amount of spending on local food, calculated as 40% of estimated food spending for *all* organizations in each category.

The same formula used throughout the report – in which wholesale prices are estimated to equal half of retail prices – is used to equate the wholesale spending figures to retail equivalent values. Those retail values are then carried over into Table 17 (next page) to generate a single set of figures to describe the total market potential for locally-grown food in WNC.

At the end of Section 2, Direct Sales were projected to grow at the same rate over the next ten years as they grew in the previous ten years. That rate of growth implies that future Direct Sales are, much as they are now, mostly fruit and vegetable sales. For this set of projections – which relies on a longer term perspective and involves substantial improvements to processing and distribution systems for local meat, poultry and dairy products – a different set of assumptions may be more appropriate which would project Direct Sales to reach \$21 million by 2016.¹²¹

In the framework that uses three levels of demand this could still be called **desired spending** since it involves some level of projection but is not intended to represent a maximum spending figure. Rather than calculating an upper limit for Direct Sales, \$21 million is listed again in Column 3 to provide an estimate for **maximum spending** in direct markets.

	Current Spending	Desired Spending	Maximum Spending
Total for selected categories of large-scale buyers (Table 16 – retail equivalent)	\$11,445,856	\$430.9 million	\$633.2 million
Direct Sales	\$3,100,000	\$21.0 million	\$21.0 million
Total	\$14,545,856	\$451.9 million	\$654.2 million

¹¹⁹ *Consumer Expenditure Survey*, Bureau of Labor Statistics.

¹²⁰ *Industry Census: The GPO Food Dollar*. November 15, 2006. Foodservice Director Magazine. (Note: A GPO is an entity that leverages the purchasing power of a group of businesses, e.g. hospitals, to obtain discounts from vendors based on the collective buying power of the GPO members.)

¹²¹ This assumption calculates Direct Sales as a proportion of total sales. Whereas Direct Sales represented 0.6% of total cash receipts from farming in the region in 2002, this projection calculates Direct Sales as 3% of total cash receipts from farming. The value of cash receipts is based on USDA projections to 2016.

From the table, \$284.2 million represents the amount of locally-grown food WNC businesses and consumers could buy from local producers if changes were made to the way food moves from farm to market in the region. That value does not reflect changes in tastes and preferences for local food, but is calculated as the amount that businesses and consumers could spend based on their interest in local food right now.

An important distinction between potential spending detailed in this table and potential spending from Table 10 at the end of Section 2 is that there are significant differences in the types of infrastructure improvements needed to achieve **desired** or **maximum** spending. For example, moving fresh produce from farm to market may require refrigerated trucks and storage facilities, but moving meat from farm to market could require those things plus local facilities for processing the food. So \$654.2 million should be regarded as a very long-term goal linked to substantial changes in local food production and distribution systems plus increased spending linked to increased interest in local food.

As before, the significance of any spending on locally-grown food lies in its potential to increase returns to individual farmers and generate additional economic impact to the region. The breakout box at the end of Section 2 is repeated on the next page with figures updated to reflect spending on *all types* of food and farm products.

What is the potential impact of increased spending on all types of locally-grown food?*

• **Potential for improving individual farm profitability**

Local markets have the potential to improve individual farm profitability. Farmers receive different returns depending on where and how they sell farm products. The highest returns are possible in direct markets where goods are sold to consumers at retail prices. In those cases, farmers earn 100% of the retail price of food. Beyond direct markets, farmers can earn as much as 50% of the retail price of food by selling directly to large-scale buyers. This reflects the assumption that wholesale prices equal approximately half of retail prices, an assumption driving many of the calculations in this report. In other cases, where farmers sell to intermediaries who then resell to local buyers, the farm value share would be somewhat less than 50%, possibly closer to the 20% average farm value share reported for all types of food in the larger national and global food system.¹²² The following scenarios illustrate how different income streams can impact farmers:

Scenario 1: Farmers sell \$452 million worth of produce and earn 20% of the retail value of those sales, or **\$90 million**.

Scenario 2: Farmers sell \$452 million worth of produce – approximately \$21 million direct to consumers (100% farm value share) and the rest split evenly between sales directly to large-scale buyers (50% farm value share) and sales to intermediaries who resell to local buyers (assumed 20% farm value share) – and earn **\$171.8 million**.

Scenario 3: Farmers sell \$452 million worth of produce to local markets – approximately \$21 million direct to consumers (100% farm value share) and the rest directly to larger scale buyers (50% farm value share) – and earn **\$236.5 million**.

Any number of scenarios is possible. It is important to note that there are also cost implications for farmers selling to local markets. These involve changes in transaction costs, such as the time and effort involved in negotiating sales directly with large-scale buyers or time spent packaging and marketing food at tailgate markets. If transaction costs rise at the same rate as total revenues, the gain to the farmer of selling to local markets will be lost.

• **Potential for Expanded Regional Economic Impact**

The local multiplier effect (LME) is a term first used by economist John Maynard Keynes in his 1936 book *The General Theory of Employment, Interest and Money* to describe the way that dollars are recirculated within a local economy before leaving through the purchase of an import. According to the theory, \$452 million of spending on local farm products would add more than that to the local economy as local farmers re-spend the money on products and services in the local community. There are many factors which influence the number of times dollars are thought to recirculate, but LME's are commonly reported to range from 1.5 to 3.0 times. Within that range, the impact to the local economy of \$452 million in spending on local farm products would be \$678 million to nearly \$1.4 billion.

*The figures used in this illustration are from Table 17.

Where does \$452 million come from to purchase produce from local farms? If just half of WNC's families spend \$10 each week on locally-grown food \$452 million would stay in the local economy helping sustain mountain farms.

¹²² *CPI, Consumption and Prices Briefing Room*. Economic Research Service.

SECTION 4: Understanding the Gap between Demand and Supply

The previous two sections of this report demonstrated a gap between demand and supply of locally-grown food in the region. Section 2 showed that many retailers, restaurants, and institutions that have high interest in buying locally-grown food are either not buying it at all or buying it in small quantities relative to the total amount they could be buying. Section 3 showed that for each of the major types of food produced in WNC, only a fraction of all food consumed by the region's residents is produced by the region's farms. Partly that represents an opportunity for local farmers to expand production to serve local markets, but to suggest that expanding production is the answer would be overly simplistic.

After examining data that illustrates the gap, this section explores why it exists by reviewing barriers to advancing the local food system in the region. The list of barriers is based on information provided by various stakeholder groups, including NC Cooperative Extension agents, local food advocates working in nonprofit and academic organizations in the region, selected groups of farmers, and potential buyers of local food.

Chapter 1: Defining the Gap

Two sources of data are used to illustrate the gap between supply and demand of locally-grown food in the region. One is an online survey for consumers regarding various types of food they purchase or would like to purchase from local producers. The survey was completed by 87 consumers who currently buy local food direct from farmers in tailgate markets, through CSA programs, on-farm retail, or roadside stands. The second is a written questionnaire mailed to organizational buyers of local food, including 69 businesses that were listed in ASAP's *Local Food Guide* in 2006 and 33 other organizations with high interest in local food (based on information provided in market surveys described in Section 2). Responses were received from 40 organizations surveyed, for a response rate of 39%.

It is important to note that both surveys were part of a feasibility study examining interest in locally produced poultry and rabbit meat as they relate to the need for an independent, government-inspected small animal processing facility in the region. The fact that both surveys featured more questions about poultry and rabbit than any other type of food may have skewed the results to overemphasize interest in those products. Also, survey respondents likely had higher interest in meats than non-respondents.

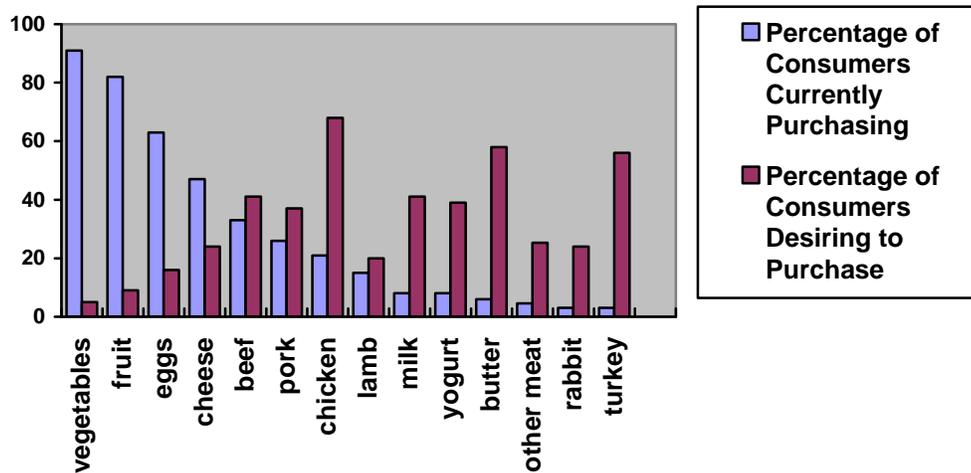
It is also important to recognize that the surveys to consumer and organizational buyers described in this chapter were targeted to highly motivated buyers, that is, buyers with established high interest in local food. Setting aside the basic question of interest in local food, then, the purpose of this analysis is to help answer questions such as:

- Are businesses and consumers with high interest in locally-grown foods able to get the foods they want from local producers? and
- If not, which foods are they able to get?

Consumer Data

Consumers completing the online survey were asked to name which categories of food they currently purchase and which categories of food they would like to purchase direct from local farmers. In Figure 6, this information is presented visually to show that there is significant unmet local demand for most categories of meat and dairy products. The unmet demand is represented by the percentage of consumers who want a particular type of local food but are not currently buying it. These data do not show whether consumers are able to get as much as they want of any particular type of locally-grown food, simply whether or not they can get it at all.

Figure 6: Local Food Purchasing by Highly Motivated Consumers in WNC



Note: The high percentage of consumers interested in poultry and rabbit meat may reflect the fact that this survey was part of a needs assessment for a local meat processing facility.

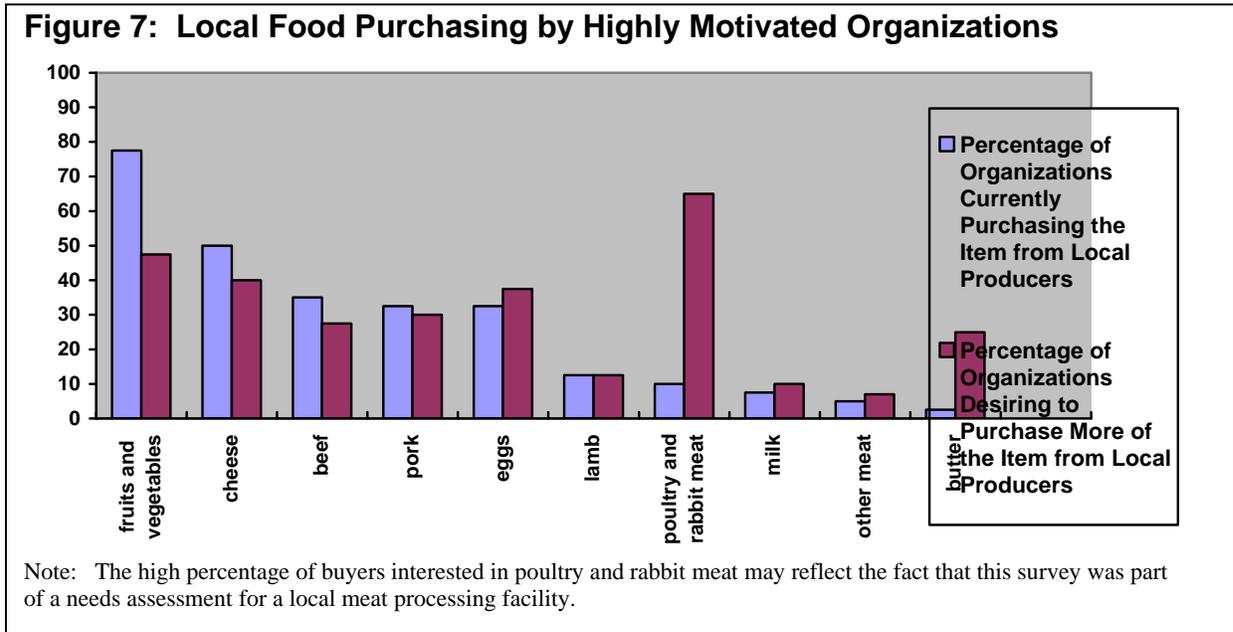
Consumers with high interest in local food reported buying fresh produce from local producers more than any other type of food, followed by eggs and then cheese. Of 87 consumers completing the online survey:

- 91% buy vegetables direct from local producers;
- 82% buy fruit direct from local producers;
- 63% buy eggs direct from local producers; and
- 47% buy cheese direct from local producers.

Most of the foods these consumers want but are not purchasing from local producers require some level of processing – including several types of meat, milk, yogurt, and butter. The lack of local processing options for regional producers appears to be at least one contributor to the gap between supply and demand for highly motivated consumers.

Organizational Buyers

Like consumers, organizational buyers reported higher rates of purchasing local produce than all other categories of food. For this group of buyers the gap is represented by businesses and organizations reporting that they would like to buy *more* of a particular product than they are currently buying (see Figure 7).



For each category of food named on the survey there were at least some organizations that reported they would like to purchase more of it from local producers. Even for foods like fruits and vegetables – which are able to move from farm to market pretty well in the region – there was significant unmet local demand reported by these buyers. These data suggest that there are other issues beyond the need for greater local processing that prevent the supply of local food from reaching organizational buyers.

Chapter 2: Barriers

Several sources of information were used to develop a list of barriers contributing to the gap between supply and demand of locally-grown food:

- **A mail survey of North Carolina Cooperative Extension (NCCE) agents in each of the 23 counties of WNC.** In addition to questions regarding county production, farmer attitudes and plans and collaboration between ASAP and NCCE, survey respondents were asked to describe issues affecting farmers in their counties and name barriers and strengths regarding the local food system. Responses from agents representing 22 counties were received for a response rate of 96%.
- **A phone survey of 22 organizations throughout the Southern Appalachian region for whom strengthening the local food system is a top priority.** These

individuals are referred to as local food advocates. The goals of this survey were to identify existing and emerging buy local food campaigns in the Southern Appalachian region; to explore interest among like-minded regional organizations in forming a learning community to share ideas and information; and to identify barriers and opportunities related to rebuilding strong local food systems in the region.

- **Surveys in various formats from businesses and institutions that serve or sell food in WNC.** As part of the market research described in Section 2, respondents were given a list of presumed barriers to buying local food and asked to rate the barriers on a scale from 1 to 10. The barriers on the list included: Coordinating purchase and delivery; finding growers and an adequate supply of local food; product quality; product price; food safety concerns; need for standard packaging; contracts or company policies; and the need for processed rather than fresh fruits and vegetables. Ratings from a total of 137 organizations (restaurants, schools, camps, hospitals, retailers, wholesalers) are included in this analysis.
- **Two consumer surveys.** One was a phone survey of 300 randomly selected consumers in Buncombe, Madison and Henderson counties and the other involved 694 customer interviews and another 732 rapid-response “dot surveys” conducted at tailgate markets in Buncombe and Madison counties. Both are described in detail in Section 2.
- **Surveys from two groups of producers.** This includes responses from 109 nursery growers (23% of total) and 29 dairy farmers (43% of total) which were collected to help answer specific questions that emerged during the research process.

Information from all of those sources has been analyzed separately with results and conclusions described in Appendix A. Here, the information is grouped together with nine separate barriers to advancing the local food system listed and described. The barriers, discussed in detail below, involve:

- Public Education and Awareness
- Infrastructure
- Land and Development Pressures
- Climate Conditions
- Price
- Local Food Distribution
- Training, Education, and Support for Farmers
- Farmer Attitudes and Plans
- Labor

Public Education and Awareness

While strong local markets and strong demand for locally-grown foods were named as assets for the region’s farm sector by many survey respondents, others cited the need for additional public education and promotional work. For local food advocates, the emphasis was on helping consumers know where to find local food and how to differentiate it from non-local food. This is an issue of product identification; one that essentially means there needs to be better labeling of local food in the marketplace. NCCE agents focused on the fact that many

of the region's residents are still not aware of benefits associated with buying locally-grown food.

The two consumer surveys identified access issues – including convenience and other issues related to the availability of local food – as top reasons consumers gave for not buying locally-grown food. To the extent that this involves knowing where to find local food, it may represent an issue of education and awareness. To the extent that it reflects difficulty local farmers have in getting farm products into local markets, however, it may also represent a problem with local food distribution or infrastructure.

Local Food Distribution

Across all categories of large-scale buyers surveyed, the two top-rated barriers regarding local purchasing were:

- *Coordinating purchase and delivery;* and
- *Finding growers with an adequate supply of local products.*

Both issues are closely related to the distribution system for food, which has changed dramatically in recent decades due to concentration in the ownership and management of food production. More than half of local food advocates and several NCCE agents described the structure of the dominant food system as a barrier to advancing the local food system in the region.

The global food system, dominated by smaller and smaller numbers of companies and farms, poses serious challenges to small and mid-size producers. Larger packers, wholesale distributors, and retailers do not see viable opportunities in working with smaller food producers who cannot meet supply volumes or post-harvest handling requirements or lack the technology needed to produce case-ready products for retail.¹²³ Moreover, vertically integrated supply systems shut out smaller farmers and smaller scale food businesses. The challenge is to find ways to work within or around the mainstream food distribution system so that local food can reach interested buyers without substantial additional costs.

Infrastructure

Infrastructure is an all-encompassing term used to describe everything involved in moving food from farm to market. Infrastructure is sometimes used to describe physical things – trucks, cooling, processing, and packing facilities, for example – and sometimes used to describe less tangible elements of the food system, such as training, education, and support for farmers (see below). Infrastructure was one of the categories most often named by local food advocates as a barrier to advancing local food systems in the region.

¹²³ Eastwood, D., J. Brooker, C. Hall, E. Estes, T. Woods, J. Epperson, and F. Stegelin. *A Marketing Systems Approach to Removing Distribution Barriers Confronting Small-Volume Fruit and Vegetable Growers*. 2004. University of Georgia.

With its focus on supplying locally-grown food to local markets, Section 3 made it clear that there is a set of infrastructure requirements specific to each type of food. When NCCE agents were asked to choose from a list what type of infrastructure was most needed in their counties, refrigerated storage was chosen most often, followed by processing facilities, local distributors, farmer cooperatives, and then markets or places for farmers to sell their products locally.

To the extent that the physical types of infrastructure can involve considerable outlays of capital, attention will need to be given to cost-benefit analyses. Several local food advocates named financial constraints and a shortage of resources as barriers to advancing the local food system. Without careful planning, limited resources can quickly be used up on infrastructure that may not achieve desired results.

Training, Education and Support for Farmers

Both NCCE agents and local food advocates agreed that farmers in the region need additional training, education, and support regarding accessing local markets. They acknowledged that growing for local markets is in many ways different from growing for commodity markets. According to survey respondents, grower education and training in this context has several components. One involves the need for skills or assistance regarding marketing farm products locally. A second involves the need for technical support and information regarding growing new crops or using sustainable growing practices, which are generally more important in local markets. A third area deals with information. According to survey respondents, farmers need information about how to communicate with large-scale buyers, about packaging requirements, quality standards and delivery parameters. They need information specific to each type of local market (i.e., restaurant, retail, institutional).

Land and Development Pressures

Every single NCCE agent completing a survey named issues related to increasing land values as one of the top issues affecting the future of farming in the region. The challenge is linked to the tax burden associated with rising land values and pressure for farmers to sell their land to developers.

Farmer Attitudes and Plans

Related to financial pressures, farmer attitudes and plans are of prime importance in any effort to expand the local food system. Issues include how long the region's farmers and subsequent generations in farming families can be expected to continue farming; whether or not farmers are interested in shifting to new crops or selling to local markets; and to what extent replacement farmers are emerging in the region as other farmers retire or leave farming. Absent a set of answers to these questions direct from farmers, NCCE agents were asked to make predictions about farmer attitudes and plans based on their work in the field, interacting directly with farmers on a regular basis. In some counties agents estimated that as many as 45% of farmers would exit farming over the next five years, though the average rate of exit predicted was around 16%.

Recognizing that new farmers are replacing some that retire each year, agents representing half of the counties reported that the farm population in their counties would probably stay the same. Lifestyle farmers – which refers to people that choose to go into farming because they like the lifestyle it affords – were rated as the top category of replacement farmers, followed by retirees, then organic farmers, next-generation farmers, and finally Latino farmers. Extension agents named several barriers to next-generation farmers becoming primary farm operators, including a lack of interest in farming and the challenge of farming profitably in a global farm economy.

As farmers retire or farms change ownership, there is a need for transition planning or similar support structures to facilitate those processes. According to a 2005 survey conducted by the North Carolina Farm Transition Network (NCFTN), a relatively small proportion of NC farmers have committed to any retirement or estate planning or made plans about passing their farms on to a successor.¹²⁴

Climate Conditions

While only a few NCCE agents and local food advocates named seasonality as a barrier to a strong local food system, this issue was at the forefront of potential buyers' reasons for not buying more locally-grown food. Almost half of organizational buyers surveyed gave a high rating to the barrier "Finding growers or a local product supply." In commenting on the survey, some buyers explained that a significant part of the problem relates to seasonality and the fact that they cannot count on a steady, consistent supply of the products they need from local growers.

The seasonality of production is a barrier that will always be present in the region, though its influence can be minimized through various demand, supply and infrastructure interventions. On the production side, for example, season extension techniques include the use of hoop houses and similar greenhouse structures or successive planting techniques which effectively extend the growing season for certain crops. WNC's mountainous terrain also offers the opportunity for extended seasonal production because crops can be in different "seasons" within the region depending on the altitude of the farm.

On the consumption side, consumers may be encouraged to eat a more seasonal diet, in which products like tomatoes and sweet corn are consumed more often in summer months and root vegetables and greens are consumed more often in winter months. As processing becomes more accessible at the local level, consumers could also be encouraged to purchase more meat, dairy and processed produce from local producers during non-harvest months.

Labor

According to NCCE agents, the main way that labor represents a challenge for the local food system is that it is difficult for farmers to find local farm help. A recent estimate is that more than 8,000 migrant and seasonal farm workers work on WNC farms during the harvest

¹²⁴ See Appendix D for a brief description of the NCFTN's research.

season, pruning and cutting Christmas trees and hand picking apples, strawberries, cucumbers and other fruits and vegetables.¹²⁵ The large number of workers required to harvest the region's crops means that labor is one of the most important issues involved in expanding the local food system in the region.

According to the Institute for Southern Studies, approximately 10% of migrant and seasonal farm workers in North Carolina are participants in the H2A Agricultural Worker Program, a federal program designed to help meet the need for temporary labor during harvest times. The program provides for non-residents to legally work in the U.S. for four to six months each year. Farm workers not participating in the H2A program could be *migrant workers*, who move from place to place based on harvest requirements and are located in WNC only during peak harvest times, or *seasonal workers*, who live in the region but typically work non-agricultural jobs at other times of the year. Because most farm workers in WNC are Latinos, challenges are often present for farmers in the form of language and cultural barriers.

In order to explore labor issues as perceived by farm workers, input was solicited from the region's Latino Centers, mostly grassroots organizations staffed by or working closely with members of the Latino community.¹²⁶ Phone interviews were conducted with staff from seven Latino centers in the region. According to survey respondents, family and personal issues are as important as working conditions in terms of challenges facing farmworkers in the region. Family and personal issues include housing, medical care, education, language, and documentation status. Among work-related challenges, more than half of all comments by survey respondents focused on safety, mostly concerning pesticide exposure and related safety equipment and information. Other issues not named by survey respondents but understood to be challenges facing Latino farm workers in this region include racism, low wages, limited options for jobs when the growing season ends, the lack of legal protections and other problems related to the fact that farm workers are excluded from minimum wage laws and some Occupational Safety and Health Administration (OSHA) regulations covering other types of workers.¹²⁷

Price

Price was one of the top two barriers to buying local food named by both groups of consumers surveyed. Both surveys also showed that consumers were willing to pay more for locally-grown food. The issue of price is obviously a complicated one. Challenges related to pricing in a local food system are heavily connected to distribution and infrastructure issues described elsewhere. By their nature, large consolidated markets suppress food prices by seeking to produce larger quantities of uniform products at the lowest price possible.

¹²⁵ Larson, A. *Migrant and Seasonal Farmworker Enumeration Profiles Study: North Carolina*. 2000. Migrant Health Program, Bureau of Primary Health Care: Health Resources and Services Administration.

¹²⁶ *Exploring the Role of Latinos in the WNC Food and Farm Economy*. 2007. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

¹²⁷ Personal interview, Molly Hemstreet with the Center for Participatory Change.

Interventions in the food procurement and distribution systems may make it possible for farmers to achieve higher returns without affecting prices paid by consumers. Nevertheless, price is also an issue of education and awareness. Raising awareness among consumers about the cost of producing and distributing food in the local compared to the global food system is one way to counter the influence of price as a barrier to a strong regionally-based food system.

Other barriers

One major limitation of this study is the absence of information *directly from farmers* regarding barriers involved in selling to local markets. Some effort was made to assess farmer attitudes and perceptions through NC Cooperative Extension agents and limited producer data was gathered from nursery growers and dairy farmers. More comprehensive surveying of producers was determined to be impractical given the time and resource constraints of the research team. It is possible that one or more key barriers specific to producers' interest and/or ability to sell to local markets is omitted from the list of barriers reviewed in this chapter. Other regional research suggests, for example, that difficulty obtaining credit is a major challenge faced by farmers interested in establishing new enterprises.¹²⁸

¹²⁸ *Funding the Harvest*. 2004. Self-help Credit Union (Durham, NC) and Rural Advancement Foundation International – USA (Pittsboro, NC).

SECTION 5: Bridging the Gap between Demand and Supply

The gap refers to the fact that there is more demand than supply for many types of food produced in the region and that many consumers, businesses, and organizations indicate they want more locally-grown food than they currently can buy. Supply is understood to include more than just production. It includes issues related to the food procurement and distribution system, issues involving equipment, facilities, and processes for moving food from farm to market. This section draws on research and information presented throughout the report to generate recommendations and make conclusions about bridging the gap between demand and supply of locally-grown food in WNC.

The recommendations reflect an underlying assumption that the local food system will change incrementally over many years and that aiming for its maximum potential will require a long-term perspective. The most urgent area for action now may be related to building the supply of locally-grown food – again defined to encompass production plus other issues involved in moving food from farm to market. Yet demand-focused interventions are also important, particularly as local farm products become more available and accessible to the region’s consumers. Addressing supply issues without simultaneously addressing demand issues would be short-sighted. In that context, recommendations 1 through 6 are supply-focused interventions and recommendations 7 through 9 are oriented towards expanding demand. The last two recommendations are more general and discuss the need for better collaboration and future research by regional groups concerned with food and farming issues.

The recommendations also include points of action. Following an explanation of each recommendation is a statement of who or what group is expected to act on it. Among the intended actors are public policymakers, large scale buyers, and local food supporters – broadly defined to include ASAP and other nonprofit, academic, public and private organizations concerned with strengthening the region’s food and farm sector.

Chapter 1. Recommendations

1. Improve outreach efforts for larger scale markets

Outreach and promotional efforts to businesses and organizations have been successful, with significant increases in the number of restaurants, food stores, and other businesses joining ASAP’s Local Food Campaign over five years. The *Local Food Guide* provides information to consumers about where to find locally-grown food in the region, but similar publications are needed to show larger-scale buyers where to find locally-grown food and how to make local purchasing work. *The Mixing Bowl*, introduced by ASAP in 2006 as an online and print publication linking restaurants and producers, is an example of how ASAP has begun to address this challenge.

Similar publications are needed for other categories of large scale buyers, such as hospitals, summer camps, school and colleges. Drawing on research-based barriers specific to each group of buyers, it may be appropriate to develop outreach materials including practical steps

and models of success from other regions that could be replicated. This is essentially a supply-side intervention since improving the ability of large scale buyers to satisfy their desire for local food and farm products is a way to make those products more available to consumers.

2. Improve labeling of local food

The research confirms the need for better or more expanded labeling of local foods in the marketplace. Labeling is important both because it allows consumers to act on their preference for locally-grown food and it allows any price premiums associated with the food being locally-grown to accrue to producers. In the Asheville area, 82% of consumers surveyed indicated that they would buy more local food if it were labeled as local, and 77% of survey respondents agreed with the statement “When locally produced foods cost a little more, they are worth the extra cost.”¹²⁹ With ASAP having launched the *Appalachian Grown*TM labeling initiative in 2006, there is tremendous opportunity for expanding that program and improving it. Wider recognition of the label is needed to ensure its value for producers.

3. Provide information and support to growers

Farmers will need assistance and information regarding strategies for selling to local markets. For direct markets, basic business management and marketing skills are important. For larger scale markets, information on packaging and labeling requirements as well as how producers can address buyers’ food safety concerns are critical to success. Farmers need specific information about what markets are available to them and how to access them. Growers may also need information about shifting to fruit and vegetable production and instruction on how to use more sustainable production methods, which are increasingly important in local markets. For large and small scale markets alike, farmers need basic skills like business planning, promotion, and marketing in order to be successful in local markets.

4. Advocate for policies that favor local food distribution and sale

Processing requirements for meat and dairy products vary considerably from state to state, which means that changing North Carolina requirements to favor local food systems is a realistic goal. By working with policymakers at both state and local levels, local food advocates can not only pursue changes in policies affecting producers in the region, but keep agriculture issues at the forefront of the many regional planning and promotion efforts. Policy advocacy is also important as it relates to expanding the reach of local markets into low-income market segments. Accepting food stamps, for example, can be logistically problematic for markets that traditionally operate on a cash economy. Some other regions have used Food Policy Councils as structures for organizing policy advocacy efforts, though the efficacy of this approach is uncertain (see report in Appendix A).

¹²⁹ *Locally Grown Food Strategic Positioning Research*. 2004. Research Inc: Atlanta, GA. (Appendix A)

5. Help maintain working farmland in the region

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 region. This can be accomplished through initiatives such as farmer transition programs, farmland preservation activities and other strategies affecting land use. Unrelated to land use but still closely related to the ability of the region's farms to continue and/or expand food production are programs and policies affecting seasonal farm labor. With many individual farm support agencies already working on these issues, this recommendation is as much about achieving a high level of coordination and collaboration among existing agencies as it is about developing any new action steps.

6. Identify points of intervention in food distribution and infrastructure systems

Infrastructure interventions include mostly practical steps designed to make it easier for local producers to sell their goods to local markets. They can involve adapting existing components of the food distribution system to accommodate local or establishing new facilities for local processing in the region. Based on a thorough review of food procurement and distribution systems in the region, interventions with good potential include:¹³⁰

- Backhauling – a practice where self-distributing retailers pick up produce from farmers on return trips to a centralized warehouse for further distribution to individual store locations;
- Pooling of production – through farmer cooperatives or through locally-based packing houses and distributors who collectively handle items from multiple producers;
- Developing the capacity of the Western North Carolina Farmers' Market;
- Expanding local food distribution through direct marketing channels; and
- Building regional processing capabilities.

7. Expand public education and awareness about local food

Strong demand for locally-grown food and farm products confirms that what ASAP and others have been doing to build public awareness and support for local food is working. In that sense, the research represents a mandate to continue those activities. In particular, the media messages, the promotional efforts, the general public education and outreach should be continued. It may be appropriate to add new messages to the public education campaign 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 local producers. 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.

¹³⁰ *The Infrastructure of Food Procurement and Distribution: Implications for Farmers in Western North Carolina*. 2007. Appalachian Sustainable Agriculture Project: Asheville, NC. (Appendix A)

8. Expand the Local Food Campaign more fully throughout the region

Historically, Campaign activities have been concentrated in Asheville and surrounding counties based on its position as the hub of economic activity and population density in the region. Nevertheless, there are many more farms in outlying areas. Expanding opportunities for farmers in the region to sell their goods locally could mean opening new tailgate markets in counties where there are few. It could also involve expanding the Mountain Tailgate Marketing Association (MTMA) or establishing similar organizations throughout the region. As far as consumer outreach is concerned, different methods for reaching rural communities may be necessary.

9. Integrate efforts to promote agriculture with efforts to promote tourism

Tourism and agriculture are two of the largest industries in the region that – except in the case of on-farm agritourism – operate more or less independent of each other. This is despite the fact that farms occupy one-third of the privately-owned land in WNC and are therefore a key part of the region's scenic landscape. There are opportunities for both industries to benefit from working together to promote food and farm tourism in the region. A framework for this type of collaboration exists in the region's designation as a national heritage area. Established by Congress in 2003, the Blue Ridge National Heritage Area includes agriculture as one of five focus areas.

There may also be a need for expanded or different tailgate market promotion among tourists. There is evidence that tourists are interested in the experience of shopping at farmer's markets. The WNC Farmers' Market is one of the top tourist destinations in the region. Yet tourists currently represent a very small percentage of tailgate market shoppers.

The Asheville City Market, scheduled to open in Spring of 2008, is expected to be a destination point for locals and visitors and represents at least one step towards expanding tailgate market sales among tourists. Increasing the variety and quantity of processed farm products for direct sale is another way to include tourists in the Local Food Campaign.

10. Expand direct market channels

The potential for expanded sales through farmers markets lies in increasing the number and location of markets in addition to continuing the market promotional activities that have been so effective. Expanding tailgate market sales also means offering training, workshops and other resource materials for farmers interested in selling at the markets. Community Supported Agriculture programs also hold good potential for expansion in the region.

11. Strengthen partnerships among regional organizations

No one organization can do all of this work alone. New partnerships need to be formed, relationships expanded, and roles clarified in order to move towards a network of successful local food systems within the region. The agenda is large and broad, probably more than any one organization can handle effectively.

From the survey of organizations working to expand the local food system in the Southern Appalachian region, every single one said they would like to be part of a group working to share best practices and lessons learned. Among NCCE agents surveyed, more than half of the agents gave suggestions for how NCCE and ASAP could work together more effectively on issues related to regional producers' ability to sell farm products to local markets. Clearly there is strong momentum for collaboration and cooperation in the region.

Outside of agriculture, there are other groups where partnerships are critical for advancing the local food agenda. By working with farmworker support agencies, for example, ASAP and others involved in local food issues can help ensure the long-term success of the industry. Partnerships with food security organizations can help accomplish some of the basic objectives of local food organizations – to ensure a consistent supply of fresh, nutritious food to all the region's residents, for example. Finally, partnerships with governmental organizations can facilitate the policy advocacy process and help local food advocates realize some successes in shaping legislation to promote and expand local sales of local farm products.

12. Conduct additional research in identified areas

As is always the case with a research project of this magnitude, there are areas where additional research is needed. The research needed to advance the local food system includes examining efforts by groups in other regions to expand their local food systems. There is a lot to learn from those groups about food purchasing preferences and priorities for different types of buyers. There are examples of effective educational messages and models of success for incorporating local food into hospitals or schools, for example.

There are also some research tasks uncovered from this research which are particular to this region. For example, the report suggests it could be useful to more fully explore the potential of local markets for nursery crops; to examine the role of processing in expanding the local food system; to clarify the extent to which development pressures threaten the region's farmland; and to explore the full effects of the tobacco buyout on regional farmers. University-based research investigating additional options for season extension in the region might also be useful.

Finally, research evaluating the effectiveness of local food system interventions is needed. Documenting the success of programs and activities can significantly influence future funding streams and help determine the most appropriate use of resources.

Chapter 2. Conclusions

This collection of surveys, government statistics and other research provides a baseline of information about the Western North Carolina food and farm economy. The report also calculates potential spending on local food at future intervals and in so doing quantifies the vision for a strong local food system. It can be a valuable tool for planning and monitoring change over time.

What is evident from the research is that there are areas where ASAP's Local Food Campaign is working well and should be continued and there are other areas where expansion of the Campaign is appropriate. There are also opportunities to broaden the agenda and begin new work. Partly this reflects the fact that as the local food system in the region has moved well beyond direct markets, new issues and challenges have emerged.

In large measure, those new challenges involve the area between demand and supply, which has been generally termed "infrastructure." Beyond physical types of infrastructure there are opportunities to expand local markets for local farm products by altering food distribution systems and identifying ways that local producers can tap into existing supply chains for retailers and other foodservice establishments in the region. Even as infrastructure improvements are being made and efforts to increase demand are continued, it is appropriate to consider building the supply of fruits, vegetables, and other foods for sale to local markets.

While a strong local food system has potential health, environmental and other benefits for the region's residents, it is fundamentally a way to sustain and strengthen farms and farming. The farm sector is a substantial contributor to the region's overall economy and a significant driver of tourism through its contribution to the region's natural beauty and scenic landscape. A strong local food system, then, is a powerful economic development tool with the potential to make the region a better place to live and work.

APPENDIX A: Research

The report *Growing Local: Expanding the Western North Carolina Food and Farm Economy* is based on analysis of primary and secondary data as well as results from a series of surveys commissioned by ASAP and carried out between 2000 and 2006. Data from each survey are analyzed independently, with major findings subsequently integrated and used as the basis for this report. A total of twenty distinct *Research Reports* are included in this Appendix following a brief description of the survey methodology in Table 18 below.

Table 18: Research Reports		
Title	Pages	Methodology
<i>Locally-grown Foods Strategic Positioning Research</i>	4A – 54A	A phone survey to 300 randomly selected consumers in Buncombe, Madison and Henderson counties conducted in 2000 and repeated in 2004 with slight modifications to some questions. Surveys were completed with consumers over 18 years of age who reported that they do the majority of grocery shopping for their households.
<i>Western North Carolina Food and Farm Economy: Highlights of a Data Compilation</i>	55A – 62A	This compilation includes selected data items from the USDA Census of Agriculture for the 23 counties of western North Carolina, as well as information showing estimated fruit and vegetable consumption in the region.
<i>A Market Analysis of Tailgate Farmers' Markets of Buncombe and Madison Counties</i>	63A – 86A	Face-to-face interviews were conducted with 694 shoppers at six tailgate markets in the summers of 2003 and 2004. An additional 732 rapid-response “dot surveys” were completed in 2003, in which shoppers were asked to indicate their answers to 5 questions by placing a dot on a poster listing possible answers to the questions. Customer counts were also conducted to determine an estimate of the number of shoppers present at the markets on the days of data collection.
<i>Results from a Survey of Farmers' Tailgate Market Vendors in Buncombe and Madison Counties</i>	87A – 92A	Written questionnaires were completed anonymously by 61 vendors representing eight tailgate markets in Buncombe and Madison Counties during the summer of 2003.
<i>Community Supported Agriculture in the French Broad River Basin</i>	93A – 97A	In 2004, an email questionnaire was sent to 17 CSA farms listed in ASAP's Local Food Guide that year. 12 farms completed the survey, for a response rate of 71%.
<i>Results from a WNC Farm-to-College Survey</i>	98A – 102A	Phone interviews were completed with Foodservice Directors at 15 of 17 (88%) colleges and universities in western North Carolina. The interviews were completed during the 2004-2005 and 2005-2006 academic years.

<i>Summer Camps as a Potential Market Channel for Locally-grown Food in Western North Carolina</i>	103A – 106A	An online survey was distributed to 49 summer camps in WNC in the Spring of 2006. Representatives from 23 camps completed the survey for a response rate of 47%.
<i>Defining Success in the Farm-to-School Arena</i>	107A – 112A	In-depth interviews were conducted with Child Nutrition Directors in five public school districts in WNC in January of 2006. A written questionnaire was mailed to the remaining 19 Child Nutrition Directors representing public school districts in the region. Interview and/or questionnaire data was collected from 19 (79%) of the districts.
<i>Restaurants as a Market Channel for Locally-grown Food in Western North Carolina</i>	113A – 116A	This report uses data from the 2002 US Economic Census to project the potential for locally-grown food purchases by full-service restaurants in WNC.
<i>Local Food Purchasing by Highly Motivated Businesses and Consumers in Western North Carolina</i>	117A – 122A	This report presents data from two surveys: 1) In response to a link posted on ASAP’s website, an online survey of consumers with high interest in local food was completed by 87 consumers over a three week period during the fall of 2006. 2) A written questionnaire was mailed to 102 organizations with established high interest in buying locally-grown food in the fall of 2006. A total of 40 were completed for a response rate of 39%.
<i>A Survey of Licensed Dairies in Western North Carolina</i>	123A – 126A	A written questionnaire was mailed to 68 dairy farms in WNC during the fall of 2006. A total of 27 questionnaires were returned, for a response rate of 40%.
<i>The Value of Appalachian Grown™ labeling for Nursery Growers in Western North Carolina</i>	127A – 131A	A written questionnaire was mailed to 469 nursery growers (not including Christmas tree growers) in WNC during the summer of 2006. A total of 109 surveys were returned, for a response rate of 23%.
<i>A Survey of Local Food Activities in the Southern Appalachian Region</i>	132A – 146A	Phase I of this research, completed during 2004, involved an email survey of Agricultural Extension agents and selected non-profit organizations in 100 counties of Southern Appalachia. The purpose of this initial survey was to gather information about local food campaigns and activities in the region. Seventeen responses naming dozens of organizations were received. Phase II of the research involved in-depth interviews of 22 Program Directors of non-profit and academic groups working on local food system issues in the Southern Appalachian region. The in-depth interviews were conducted during 2006.

<i>Hospital Foodservice in Western North Carolina: Implications for the Local Food System</i>	147A – 150A	A phone survey of 27 hospitals in WNC was conducted during the fall of 2006. A total of 15 interviews were completed, for a response rate of 56%.
<i>A Survey of NC Cooperative Extension Agents in Western North Carolina</i>	151A – 156A	During the fall of 2006 a written questionnaire was mailed to NC Cooperative Extension agents representing each of the 23 counties of WNC plus the Cherokee Indian Reservation. A total of 22 surveys were completed, for a response rate of 92%.
<i>A Survey of Shoppers at the WNC Farmers' Market</i>	157A – 162A	Face-to-face interviews were conducted with 75 shoppers at the WNC Farmers Market during the summer of 2006.
<i>Opportunities for Expanding Food and Farm Tourism in Western North Carolina</i>	163A – 169A	An email message with a link to an online survey was sent to 30 tourism agencies representing the 23 counties of western North Carolina in the summer of 2006. Follow-up consisted of phone and email reminder messages. A total of 11 agencies completed the survey for a response rate of 37%.
<i>Exploring the Role of Latinos in the Western North Carolina Food System</i>	170A – 175A	Latino Centers in WNC were contacted by phone and email and asked a series of questions about Latino farmers, farmworkers, restaurant owners and tiendas in their communities. A total of seven organizations contributed information to this survey.
<i>The Infrastructure of Food Procurement and Distribution: Implications for Western North Carolina Farmers</i>	176A – 192A	This report examines the food industry in the U.S. and its implications for farmers in WNC who want to grow for and sell to local markets. Local patterns of distribution are presented as models with an emphasis on their 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.
<i>Food Policy Councils: What and Why?</i>	193A – 196A	This paper reviews the work of Food Policy Councils in the US.