

LIFE ON THE FARM: MAKING NORTH CAROLINA'S AGRICULTURAL
LANDSCAPE SUSTAINABLE

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ABSTRACT

ELIZABETH ALLEN TEMPLIN: Life on the Farm: Marking North Carolina's
Agricultural Landscape Sustainable

(Under the direction of Barbara Friedman, Frank Fee and Alice Ammerman)

Since the 1980s, farmers, researchers and activists have questioned the effects on the environment and public health of conventional agriculture, which uses fossil-fuel based agricultural chemicals to produce crops. Although conventional agricultural methods are capable of producing large crop yields with less labor than other methods, research has linked these methods to global warming, harming natural resources and endangering public health. These concerns spurred a sustainable farming movement that is concerned with three pillars of sustainability: environmental health, economic viability and social equity. This thesis, comprising three print articles, explores sustainable farming in North Carolina. First, this thesis studies the economic viability of farming in a profile of an organic farmer. Second, it explores how a community garden teaches individuals about the environment and impacts gardeners' lives. Lastly, this thesis examines a collaborative, sustainable agricultural initiative that fits into a larger effort toward sustainability in the state.

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INTRODUCTION

Since the beginning of the 20th century, agriculture in the United States has increasingly moved away from small family farms to an agricultural industry that relies on fossil fuel-based agricultural chemicals for food production. Early in the 1900s, some farmers began to organize and share technology, creating the beginnings of an agricultural industry. At the same time, researchers at land grant universities were developing agricultural chemical pesticides and fertilizers to help farmers produce crops (Harwood, 1990). As more farmers were successful growing crops using fertilizers and pesticides, fewer farmers used alternative growing methods and the use of chemicals became a common practice, often referred to by researchers as conventional or industrial agriculture.

Over the years, activists questioned the use of these growing practices but there was no successful campaign to minimize the use of fertilizers and pesticides on crops. In 1964, Rachel Carson blew the whistle on the environmental and health effects of DDT, but growers continued to use other agricultural chemicals (Harwood, 1990). In the 1980s, some scientists and farmers voiced concerns over the effects of fossil fuel-based agricultural chemicals on natural resources and the safety risks to public health of food grown with chemicals (USDA, 1980). Recognition of environmental problems caused by conventional growing methods spurred a movement to develop alternative methods of food production that did not put natural resources and public health at risk.

More than a trend, the alternative farming movement figures into scientists' efforts to find solutions to mitigate global warming caused by the increased emission of greenhouse gases into the atmosphere. In 2007, the Intergovernmental Panel on Climate Change reported that human activities since 1750 have greatly increased natural global concentrations of greenhouse gases in the atmosphere and that the increase was primarily due to the use of fossil fuels (Intergovernmental Panel on Climate Change [IPCC], 2007). The report also linked agriculture as the primary source for atmospheric increases in greenhouse gases CH₄ and N₂O (IPCC, 2007). Climate scientists have called for a reduction in human-caused greenhouse gases by minimizing dependence on fossil fuels and agricultural practices that have contributed to global warming. Given the environmental and health concerns raised by the effects of conventional agriculture, the purpose of this thesis project is to examine how farmers, gardeners and communities are using sustainable growing methods to repair and protect natural resources and human health.

Despite the environmental, health and global warming concerns related to conventional agriculture, these methods are still widely used across the United States. Although this project's focus is on sustainable agriculture, the intention is not to overlook positive aspects of conventional agriculture. Though an extensive review of the literature on conventional agriculture is beyond the scope of this project, what follows is a brief summary of the benefits of conventional agriculture that complicate the debate over food production.

Agricultural machinery, fertilizers and pesticides historically have increased farmers' efficiency, allowing farmers to reliably produce more crops with less labor

(USDA, 2000). As fewer farmers and farm laborers were needed to feed the country, labor shifted to other industries. By the 1940s, farmers' use of fertilizer and pesticides had doubled from the previous decade, a growth trend that continued through the 1990s (USDA, 2000). During this time, as the use of agricultural machinery and chemicals increased and agricultural research at land-grant universities improved, food production on individual farms increased (USDA, 2000).

The success of conventional growing methods resulted in centralization in American farming in terms of production, processing and distribution of food (Beus, 1991). The expense of farm machinery forced some farms to consolidate, creating an agricultural industry that became an important contributor in the country's economy. Beginning in the 1940s, agricultural commodities were traded internationally, opening foreign markets to American farmers for the first time (Beus, 1991).

The debate about food production goes beyond growing methods. The food production system in the United States is multi-faceted, involving national and global economies, international trade, and national and global food supply. The food system itself is regulated by complex agricultural policy created by Congress and the USDA. This project focuses on the environmental aspect of food production to include stories of advocacy for sustainable agriculture. Further research might include studies on agricultural legislation and regulation, economic policy, or national and global food supply.

Although farmers have had success using conventional production methods, the use of sustainable farming methods has grown over the last 15 years. The most recent census by the United States Department of Agriculture in 2002, reported that just over

7,300 farms out of more than 2.1 million farms in the United States were certified organic; however, the number of certified organic farms has grown each year (USDA, 2002). In fact, the USDA (2009) reported that the number of certified organic farmland doubled between 2002 and 2005. Still more farmers use sustainable farming methods that may improve and protect the environment, but may not meet the rigorous requirements of the Department of Agriculture's National Organic Program, which inspects farms annually for organic certification. Such sustainable farming methods have gained popularity in recent years and have been widely reported in the mass media and in popular nonfiction.

North Carolina has a rich agricultural history of farmers who have used both conventional and sustainable growing methods. Agriculture remains an important industry in the state and, according to a report from the North Carolina Department of Agriculture and Consumer Services, North Carolina is a national leader in the production of tobacco, pigs, sweet potatoes and Christmas trees (NCDACS, 2007). Despite its role as a leader in national agricultural production, North Carolina has seen a decline in the number of farms and farmland in the state over the last five years (NCDACS, 2007). At the same time, there has been a growing demand among consumers for organic and locally grown food (Appalachian Sustainable Agriculture Project, 2003). As North Carolina farmers address economic and environmental concerns, more farmers may choose to adopt sustainable agricultural practices in order to preserve farmland and natural resources for future generations and meet consumer demand for sustainably produced products. Sustainable agriculture in North Carolina will continue to emerge as a new industry for the state and, as it develops, is an important topic to study.

This thesis is an in-depth examination of how North Carolinians are making agriculture in the state more sustainable. The three articles in this thesis examine the work of a sustainable farmer, a community garden and sustainable agriculture advocates who are working to protect the environment and improve public health by producing fresh, local, sustainable food. It will illustrate steps North Carolinians are taking to make the state's agricultural system one that is more economically viable and a system that protects the state's natural resources.

Key Terms

As with any specialized topic, there are a number of terms relating to sustainable agriculture that are frequently used by researchers, farmers, educators and activists. The definitions in this section are meant to provide clarity and serve as a reference source for readers.

Agriculture – agriculture, most simply, is the production of food, fiber and animals through farming.

Conventional or industrial agriculture – conventional or industrial agriculture refers to mainstream agriculture in the United States and to the growing methods used by the majority of farmers in the country. Conventional agriculture is, “capital-intensive, large-scale, highly mechanized agriculture with monocultures of crops and extensive use of artificial fertilizers, herbicides and pesticides, with intensive animal husbandry” (Beus, 1991, p.3).

Community garden – according to the American Community Garden Association, a community garden is, “any piece of land gardened by a group of people.” Community gardens can be located on land in rural, suburban or urban settings and can be used to grow any combination of vegetables, flowers and fruit. Community gardens may have individual plots or a shared, community plot for gardening.

Community-supported agriculture – community-supported agriculture (CSA) is a system of community members who support a farmer by buying “shares” of a harvest in advance to help cover operational and other farm expenses. In return CSA members receive weekly or monthly shares of the farm's harvest during the growing season (USDA, 2007).

Cover crop – cover crops are plants grown on a piece of land during the off-season when profitable crops are not being grown. Growing cover crops is a sustainable farming method used by farmers to enrich soil with nutrients and prevent pests, like weeds, from overtaking the land (UC Davis Sustainable Agriculture Research and Education Program, 1997).

Farm – the USDA in the Census of Agriculture defines a farm as, “any place from which \$1,000 or more of agricultural products were produced or sold, or normally would have been sold during the census year” (USDA, 2002, p.viii). For more conversational purposes, a farm is any land where food and fiber from plants and animals are produced and sold at a profit.

Farmer – a farmer is generally the person who runs a farm and who earns at least a portion of his or her living growing food and fiber.

Organic farming – organic farming is a method of crop production that, “avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators, and livestock feed additives” (USDA, 1980, p. xii).

Certified organic - when food is labeled “organic,” it means that a USDA-certified inspector has visited the farm where the food was grown to ensure that the farmer’s growing methods meet the USDA’s National Organic Program’s certification standards. Farmers who produce food organically but cannot afford annual inspection fees cannot label their food organic, but they can talk directly with customers about their farm’s growing practices.

Sustainability – the term sustainability was introduced in the 1980s. One definition comes from a report by the United Nations World Commission on Environment and Development, which defined sustainable development as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs,” (Brundtland, 1987, p.24).

Sustainable agriculture – the term sustainable agriculture was defined by Congress in the Farm Bill in 1990 as, “an integrated system of plant and animal production practices having a site-specific application that will, over the long term: satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agricultural economy depends; make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; and enhance the quality of life for farmers and society as a whole” (USDA, 2007, Sustainable agriculture: The basics, para. 3).

Sustainable agriculture also refers to a movement among farmers, gardeners, researchers and activists that has questioned the negative effects of agricultural chemicals on the environment, public health and society (UC Davis Sustainable Agriculture Research and Education Program, 1997). The sustainable agriculture movement is most concerned with environmental health, economic viability of farmers and social and

economic equity. The founding idea behind the sustainable agriculture movement is meeting, “needs of the present without compromising the ability of future generations to meet their own needs” (UC Davis Sustainable Agriculture Research and Education Program, 1997, Concept themes section, para. 2).

Finally, sustainable agriculture can be used as an umbrella term for any crop growing method that uses less agricultural chemicals in order to improve and protect the environment and public health from an organic farmer who uses no agricultural chemicals to a farmer who uses less pesticide than in previous growing seasons.

Literature Review

Sustainable agriculture is an interdisciplinary research topic that includes a range of fields, including environmental science, biology, botany, agroecology, public health and social sciences. One reason for the interdisciplinary nature of sustainable agriculture is its focus on not only improving the environmental effects of agricultural production but also its focus on the economic and social effects of agriculture. “Sustainable agriculture” acts as an umbrella phrase for a number of crop production methods that improve the environment, the economy and society and is a topic that has generated interest from scholars in diverse fields and among readers of newspapers, magazines and popular nonfiction.

Scholarly Sources

Numerous articles on sustainable agriculture have been published in scholarly journals and books since the term was introduced in the 1980s. One definition of sustainability comes from a report by the United Nations World Commission on Environment and Development. In the report, the commission defined sustainable development as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p. 24). Harwood (1990) wrote that the concept of sustainability was applied to agriculture as researchers acknowledged, “the potency of technologies, of the fragility of the earth’s environment, and of humankind’s ability to disrupt it” (p. 14). Research in sustainable agriculture includes the study of the environmental effects of growing methods, the development of specialized sustainable growing techniques, the role sustainable

agriculture plays in fighting global warming, and the effect of sustainable agriculture on social and economic factors, in addition to other topics beyond the scope of this paper.

Farmers and researchers raised concerns about the danger posed to the environment by conventional farming methods in a 1980 report by the United States Department of Agriculture. The report identified a number of negative effects resulting from the use of chemical pesticides and fertilizers in conventional agriculture. Among the concerns listed in the report were: an increased cost and unknown availability of energy sources and agricultural chemicals; a decline in soil quality and productivity; water pollution; damage to natural biodiversity systems; harm to humans and animal health from exposure to chemical pesticides and additives; and depletion of finite resources (USDA, 1980). The study found that some farmers across the country, wanting to address these concerns, had adopted organic farming practices, defined as farming without chemical fertilizers and pesticides.

With these growing concerns over the use of pesticides and fertilizers in conventional farming came a shift in thought among some researchers relating to agricultural practices, one that moved from conventional growing methods that relied on pesticides and fertilizers to an idea of ecological sustainability in agriculture by natural growing methods (Harwood, 1990). These researchers saw sustainable agriculture in the same way that the World Commission on Environment and Development saw sustainable development, as a system that would meet present needs without endangering natural resources for future generations. Gliessman (1998), a professor and researcher of agroecology, defined sustainability as, “the condition of being able to harvest biomass from a system in perpetuity because the ability of the system to renew itself or be

renewed is not compromised” (p. 13). Gliessman (1998) wrote that qualities of a sustainable agricultural system include a system that: has few negative effects on the environment and releases no toxic substances, preserves soil, uses water resources in a way that conserves water, relies on natural resources to maintain the system, conserves biodiversity, insures equality of local access to agricultural knowledge and practices.

Since the 1980s, in order to address environmental concerns, scientists have researched growing methods that Gliessman (1998) referred to as agroecology, “the application of ecological concepts and principles to the design and management of sustainable agroecosystems” (p. 13). Some of the concepts and principles Gliessman referred to include the study of crop rotations, soil nutrient management, pest management, strategies for managing weeds and the role of animals in sustainable agriculture, among others. Sustainable plant production relies on a number of principles. According to the University of California Sustainable Agriculture Research and Education Program, choosing plants appropriate for the climate of the growing site, the available soil type and plants that are resistant to pests are ways to reduce the need for agricultural chemicals and to improve sustainability among crops. In addition, diversity among the types of plants grown lessens the risk of total crop failure, enriches the soil by providing a variety of nutrients and protects soil from pests (UC Sustainable Agriculture Research and Education Program, 1997). Soil management is another strategy sustainable agriculture researchers at the University of California recommended, writing that crop variation, application of compost and manure and use of cover crops all protect and enrich soil and increase growing capability (UC Sustainable Agriculture Research and Education Program, 1997).

Besides these general principles of sustainable crop production, scholars study highly specialized aspects of sustainable agriculture. Specialized research topics are diverse, and each study helps build a case that supports the transition from conventional to sustainable agricultural practices. Some examples of specialized research topics in sustainable agriculture include Smith, Gross and Robertson's (2008) study of crop rotation in southwest Michigan, which found that the increase of corn grain yield, grown without fertilizer and pesticides, correlated directly with the number of crops in the crop rotation. Their research found that growing different grains without chemicals did not negatively affect crop production numbers compared to conventional methods. In a study of sustainable weed management, Moran and Greenberg (2008) found that certain concentrations of vinegar can be used in cotton production as an effective natural herbicide against weeds in winter cover crops. Identifying natural alternatives to pesticides for weed management is an important area of study because it allows sustainable growers to better match production rates of conventionally produced agriculture. Montgomery (2007), studying soil production and erosion, compared the effects of conventional and sustainable agricultural practices on soil erosion. He found that the conventional, plow-based method increased erosion rates significantly in comparison to sustainable, non-tilling methods and natural soil production. He wrote that soil erosion caused by conventional methods will lead to less land for food production unless more sustainable methods are used.

In addition to repairing and protecting natural resources, sustainable agriculture has also been recognized as a necessary consideration in global environmental challenges. Sustainable agriculture is especially important to efforts to reduce global

warming, by moving from the conventional system of agriculture that heavily relies on fossil fuel products, those linked with greenhouse gas emissions that cause global warming, to a sustainable system that does not depend on fossil fuel production methods. Tilman et al. (2001) wrote that the doubling of grain production to meet demand for food over the last 35 years has come at a high price. Conventional agriculture production influences ecosystems by releasing chemicals, such as nitrogen and phosphorus, and water, as well as pesticides, into the environment, changing the way that natural ecosystems function and playing a role in climate change. As human population increases, and therefore demand for food increases, Tilman et al. predicted that the release of agricultural chemicals into the environment could increase 2.4 times above current levels by 2050. The researchers wrote that the global impacts of agriculture on the environment could be mitigated if changes were made in agricultural methods such as alternative methods of pest management, the use of cover crops, the selection of more productive crops that have high yields but use few resources, and land-use planning. But new technology, policies for ecologically sustainable agriculture and decisions made at regional and local levels also will be necessary.

Lin, Perfecto and Vandermeer (2008) wrote that food production will also be affected by climate change because crops are sensitive to changes in temperature and precipitation. The researchers argued that agricultural intensification, the increase of food production, is tied to climate change because with increased production comes decreased preservation of land and resources that may help reduce global warming. They used the example of coffee, which has seen an increase in production despite the sensitivity coffee has to changes in growing conditions, to demonstrate this idea. The authors concluded

that coffee growers should consider sustainable practices like producing shade-grown beans to reduce the effects of coffee-growing on global warming and recommended similar solutions for other crops that may be impacted by climate change.

In addition to the environmental aspects, sustainability also encompasses social and economic aspects. The World Commission on Environment and Development identified three pillars of sustainable development: environment, economy and society (Brundtland, 1987). These three pillars have been cited in many definitions of sustainable agriculture, which, “integrates three main goals – environmental health, economic profitability and social and economic equity” (UC Sustainable Agriculture Research and Education Program, 1997, Concept themes section, para. 1). Sustainable agriculture focuses on the preservation of natural and human resources, by which scholars mean the value of human labor, the health of consumers and the local community (UC Sustainable Agriculture Research and Education Program 1997). According to this philosophy of sustainable agriculture, just as important as the environmental aspect of sustainable agriculture is its impact on the local economy and well-being of a community. The environmental, economic and societal aspects of sustainable agriculture merge on a local level, ensuring the health and well-being of a community through the protection and renewal of natural resources, the production of safe and healthy food, the ability of farmers and laborers to earn a living wage in a safe environment, and the growth of a local economy (UC Sustainable Agriculture Research and Education Program, 1997). The three pillars of sustainability play an important role in improving the environment overall, but also in improving rural economic landscapes.

Scholars have written about the benefits that sustainable agriculture offers the public health of local communities. Horrigan, Lawrence and Walker (2002) wrote about health threats associated with industrial food production as well as the negative environmental impacts to a local community. Health problems associated with industrial-grown food include pesticide residues from water, air and food that raise the risk of cancer, reproductive and endocrine disorders, increased exposure to foodborne pathogens from meat production, and weakened human response to antibiotics from their use in animal production. To minimize these risks as well as health risks from the deterioration of natural resources, the authors wrote that sustainable food production methods, consumption of less meat and increased exercise should be adopted to increase health and minimize disease. Twiss et al. (2003) wrote about the benefits of community gardens to local public health by improving nutrition and encouraging exercise. The research used the California Healthy Cities and Communities program as a case study of a system of programs, including community gardens, designed to improve and make communities more aware of public health initiatives. In the evaluation of this program, the researchers found that participants gained knowledge of nutrition, participated in more physical activity and made more healthy food choices.

The scholarly work on sustainable agriculture shows great depth and variation. This is a topic that has been covered from many disciplines, including environmental science, biology, agriculture, public health and community perspectives. The environmental and public health benefits of sustainable agriculture make a powerful argument for transitioning from conventional growing methods to more sustainable

methods. More research should be done on the effects of sustainable agriculture on a local level in both rural and urban communities. This study is one effort to do that.

Newspapers

Sustainable agriculture is a topic that has been widely covered by daily and weekly newspapers across the country. Newspapers have published profiles of farmers and articles on sustainable farming, community gardens, farming and school systems, health and environmental benefits of sustainable farming, and many other topics. In addition, there is a network of trade newspapers that represent more than 2,500 farm cooperatives across the United States. This literature review does not include articles from trade newspapers such as those published by the National Council of Farm Cooperatives, but rather, focuses on articles from mainstream daily and weekly newspapers in North Carolina in order to identify gaps in the literature that are then addressed by this professional thesis project. Nearly 1,200 articles from 1987 through 2008 were identified in a search of 72 North Carolina newspapers in NewsBank database using the key terms “sustainable” and “agriculture.” For the purposes of this project, which focuses on sustainable agriculture initiatives in North Carolina, the literature review addresses relevant articles from North Carolina publications.

Sustainable Farming

Among newspaper articles on sustainable agriculture, one topic that emerged was training opportunities for farmers to transition from conventional agricultural methods in North Carolina to the use of sustainable farming methods. In 1997, the North Carolina Cooperative Extension Service issued a report that encouraged growers in Chatham County to consider producing crops organically because there was a growing demand for

organic products (Price). According to Price, the number of Chatham County farms using traditional farming methods had declined dramatically in previous years due to failing business plans. Educational opportunities, like the sustainable agriculture program at Central Carolina Community College (CCCC), provided opportunities for farmers to learn new growing practices and began to draw new farming students to the state (Moose, 2004). In 2001, the *Durham Herald-Sun* reported that farmers in the Triangle were beginning to teach sustainable growing methods to students in the CCCC sustainable agriculture program (Melia). The program is unique in the southeast, and its students learn marketing techniques as well as growing methods that preserve and improve the environment.

As farmers in North Carolina have been drawn to sustainable agriculture, newspaper articles have documented the newcomers. The *Raleigh News & Observer* published an article in 2004 that profiled Kelly Dominguez, a new, young farmer who left a career as a nurse practitioner to build a farm using sustainable growing methods (Moose). According to the article, Dominguez's decision to farm is part of a small trend of new sustainable farms in the Triangle, where Dominguez has a strong support system among other farmers in the area. The article compared Dominguez's experience learning to farm to that of Cathy Jones, a more mature farmer from the area, who said she learned farming from reading books and talking to other farmers. A 2008 article built on this trend of coverage by documenting some of the challenges new farmers face when getting started (Weigl). The main challenge most young farmers face is having the capital to buy land. Weigl wrote that most farmers in North Carolina either have a family history of farming in the state or have an interest in sustainable agriculture. According to Weigl,

besides the handful of new, young farmers, farming in North Carolina is graying; the average age of most farmers is 56.

In addition, the *Raleigh News & Observer* has profiled locals who took up farming after retirement. Judy Lessler, 62, decided to farm full-time using sustainable methods after years in an office job (Friedman, 2005). Lessler had only gardened before retirement and now grows and sells vegetables and flowers at her farm in Chatham County. The article reported that the Triangle is becoming an epicenter for farming, and Lessler, as a new farmer, is an example of that trend.

Though the articles on sustainable farmers in North Carolina make readers aware of changes taking place in farming, they do not provide detail about the farmers' experiences raising crops or using sustainable growing methods. The articles raise questions about the challenge new farmers face when buying land, but the coverage does not explore other challenges related to developing a business plan that supports the farmers' environmental goals and makes the farm economically viable. This project is one effort to fill that gap.

Economic Viability

Many of the articles on sustainable agriculture in North Carolina focus on the economic viability of farming. The *Asheville Citizen-Times*, for example, reported in a 1999 article that most of the organic goods sold in North Carolina were from out of state (Laubscher). According to the article, the Appalachian Sustainable Agriculture Project was created to address this problem in Western North Carolina. The project identified a need for a network of programs, policies and markets to support and encourage local farmers to sell their goods in North Carolina and ensure that farmers can make a living

wage. A 2008 article described the challenges that farmers in Western North Carolina have faced, including droughts that have affected apple and hay production and a spring frost that killed early crops (Boyle).

In response to economic challenges, various groups have organized meetings and started programs to support farmers. The *Greensboro News & Record* reported that the keynote address at the Rockingham County Small Farm Day focused on the need for small farms to strategically consider their markets, operating costs and profits to survive (Carter, 2008). An article in the *Tryon Daily Bulletin* covered a small farms breakfast that was organized by Polk County Agricultural Economic Development to raise awareness of the local farm economy and its growth potential (Byrd, 2008). Another article written in 2008 pointed to the development of a food production system as a way to position North Carolina as a leader among sustainable food production (Glover). In the article, the reporter interviewed Jennifer Curtis, a project director with the Center for Environmental Farming Systems, who said that North Carolina has the physical traits in terms of soil and climate to be a leader in sustainable agriculture. Curtis said that in order for small, sustainable farming to be economically viable, North Carolina needs processing and packaging infrastructure, especially for sustainably raised meat products.

Newspapers have reported that nonprofits and small businesses have started initiatives to support local farmers and increase business. One article reported that the Appalachian Sustainable Agriculture Project sponsored a label program to indicate food products grown by local, Appalachian farmers (Flynn, 2007). The program includes 64 growers who label their products with “Appalachian Grown” or “Local Food” stickers in order to help consumers identify their products. Another initiative focuses on farms in the

counties surrounding Charlotte, N.C. A technology center that promotes entrepreneurship through technology, Foothills Connect, started farmersfreshmarket.org, a Web site that connects chefs in Charlotte with local farmers (Warmack, 2007). A recent article in the *Raleigh News & Observer* reported that Carolina Farm Stewardship Association is using grant money to help a few tobacco farmers grow organic wheat in place of tobacco, as demand for tobacco decreases (Murawski, 2008).

Farmers also are creative when it comes to finding ways to keep their farms financially sound. For example, one Sampson County farmer has built a venue for weddings on the farm with the help of a grant from Rural Advancement Fund International, according to the *Sampson Independent* (Hermann, 2006). The farmers, Janet and Tom Jackson, decided to open their land for weddings as a way to earn income. They built a space for wedding ceremonies and provide flowers, a cake and a honeymoon cabin on the farm as part of the wedding package. The farm still produces sustainable crops and flowers, but the Jacksons also rely on weddings for income. Similarly, other farmers are opening their land to tourists (Neal, 2005). The *Asheville Citizen-Times* reported that farmers in Western North Carolina have found that tourists are interested in visiting farms to see what farm life is like. Farmers may draw tourists to the farm with seasonal activities like apple picking in the fall or selecting a Christmas tree in December. To help farmers market agritourism opportunities, the state opened an office of agritourism that promotes farms as tourist attractions (Houston, 2004).

Some farmers have found business in unexpected places. The *Raleigh News & Observer*, in a 2006 article, described a community-supported agriculture (CSA) partnership between local farmers and Pullen Memorial Baptist Church in Raleigh

(Houston). The farmers, Ristin Cook and Patrick Walsh of Castle Rock Farm, attended a bluegrass concert sponsored by the church and identified a need among the congregation for local, organic food. The farmers set up a CSA program that provided CSA members with boxes of produce for 28 weeks a year for \$400. With this system the farmers had a guaranteed revenue source and were able to better support the farm while providing local, fresh food to congregation members who joined the CSA.

Newspapers have covered the economic issues relating to farming in North Carolina, from initiatives that encourage collaboration among farmers to the creative, nontraditional ways farmers are generating income. One economic aspect newspapers have neglected is the many marketing techniques farmers use to sell crops. One important aspect of sustainable agriculture is economic viability, and sustainable farmers take steps to draw customers and create demand for their products. An article that looks at the economic viability of farming from a farmer's perspective and describes the steps a farmer takes to generate income would fill a gap in the literature and serve an educational purpose for aspiring farmers.

Community Gardens

In addition to articles about sustainable farming and the economic challenges of sustainable agriculture, newspapers in North Carolina have reported ways that communities and individuals have gotten involved with sustainable agriculture. One way communities have learned about and become active in sustainable agriculture is through the formation of community gardens.

Some community gardens have been started with the goal of improving communities in a specific area. Winston Grows is an example of a program that supports

and helps organize community gardens in and around Winston-Salem, N.C. According to an article in the *Winston-Salem Journal*, Winston Grows has provided money and training for churches, schools, neighborhoods and civic groups to create community gardens at more than 30 sites (Bare, 2005). The program helps community members learn sustainable gardening practices and creates a local source for fresh, healthy produce and finds a new use for abandoned plots of urban land.

Other community gardens are associated with churches. Covenant Community Garden was created by members of Fuquay-Varina United Methodist Church (Moose, 2008). Covenant Community Garden was formed in order to bring people together, provide healthy food and teach members organic gardening skills. Other church gardens were formed to offer a place of healing for community members in response to a tragedy. Cedar Grove United Methodist Church started a two-acre community garden in 2006 after a community member was murdered (Coakley, 2006). The garden, Anathoth, was formed to help locals in Cedar Grove feel safe again after the murder, which went unsolved, and to bring community members together. Like other community gardens, volunteers at Anathoth learn sustainable gardening skills and have access to a fresh food supply.

As newspaper articles have explained, community gardens are also formed to provide fresh produce to help specific demographic groups. A rooftop garden in Asheville is part of a program called EMMA (Eat Better, Move More, Age Well) that helps senior citizens eat more fresh local vegetables and get more exercise by gardening (Boyd, 2008). Other community gardens have worked with food banks to provide locally grown produce to food bank clients (Kelly-Goss, 2008) and to provide fresh food and

organic gardening skills to residents in public housing (Walczak, 2007). A community garden sponsored by the American Indian Mothers Inc. produces fruits and vegetables for low-income families in Robeson and other nearby counties (Jenkins, 2004). By using sustainable growing practices, the group wants to encourage community members to embrace traditional ways of life, such as growing food. Many of the garden's volunteers are also recipients of its harvest.

Community gardens have also been used to teach students about sustainable agriculture. A community garden program in Southern Pines, N.C., called FirstGarden provides teaching opportunities for local school children and children attending summer camps to learn about healthy eating habits and outdoor activity (Staff, 2008). FirstGarden is part of a larger community garden that allows residents to grow their own organic crops in small plots of land. A similar summer gardening camp in Asheville, sponsored by Appalachian Sustainable Agriculture Project, gives kids a chance to learn about growing their own food (Blake, 2008). A community garden program at The University of North Carolina at Chapel Hill started by students in the Carolina Garden Co-op allows college students to learn about organic gardening and grow crops on campus (O'Donnell, 2008).

Though the articles on community gardens in North Carolina do a fine job of describing the origins, goals and communities served by each garden, none of the articles provides detail into how the gardens operate or shares the stories of the garden volunteers and members. Further, none of the articles explains what the volunteers and members have learned about sustainable agriculture in their own words. This thesis project

includes an article that describes the origin of a community garden in North Carolina and tells the stories of the members and the rewards of gardening.

Other Community Initiatives

Nonprofit organizations and community groups have played a role in promoting sustainable agriculture by starting initiatives that support farmers and help community members have access to local, sustainable food. One program, Food-Faith-Farms, purchases CSA shares for organizations that help people in need, like the Inter-Faith Council in Chapel Hill, N.C. (Neal, 2004). Food-Faith-Farms was started by Leaflight, an organization that promotes sustainable development. By purchasing CSA shares for the Inter-Faith Council, Leaflight hopes to contribute to the region's food security, a term that Leaflight program director Robert Smith defines as, "a condition in which all the community residents obtain safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice." A similar initiative by farmers markets in the Triangle is the acceptance of food stamps as a method of payment at farmers markets to provide community members wide access to fresh, locally grown food (Hoppenjans, 2007).

Other programs have brought local, sustainable food to schools and businesses. Appalachian Sustainable Agriculture Project's program, Growing Minds Farm to School, brings locally grown food to schools and gives students opportunities to cook and learn about gardening (Wilson, 2008). The program supports local farmers by providing them with the opportunity to sell large quantities of produce to school systems and encourages children and parents to buy and eat locally grown food. Similarly, Asheville's Downtown on the Move program, sponsored by Healthy Buncombe, the physical activity and

nutrition coalition, uses grant money to purchase CSA shares for downtown Asheville businesses (Bompey, 2008). The shares allow employees access to fresh, local food and promote a healthy lifestyle while supporting local farmers.

Magazines

Sustainable agriculture has been covered widely in magazines, though few articles in national publications focus on sustainable agriculture in North Carolina. Selected illustrative examples are offered here. *Gourmet* covered a Californian farmer's attempt to preserve farmland in times of economic uncertainty. The farmer established an agricultural land trust that protects the land from developers by providing farmers with seed money and promotes the preservation of natural resources (Richman, 2002). In 2005, a *Gourmet* reporter wrote about his attempt to live off the land, eating only seasonal food from local Vermont farms (McKibben). In a 2008 article about the Farm Bill, *Gourmet* covered the role of government in farming and the effect government subsidies have had on crop production (Hurst). This article also profiled a farmer in South Dakota who chose organic farming over corn production, a crop many of his neighbors grow because it is heavily subsidized by the government. *Atlantic Monthly* covered the local food movement in an article about the Yale Sustainable Food Project, which gained national recognition as a way to bring local food to a college campus (Kumer, 2004). *Delicious Living* published an article in 2008 that provides definitions of different farming methods from organic to sustainable to hydroponic in the words of the farmers who practice each method (Pehrson).

Sustainable agriculture in North Carolina has also been featured in at least one national magazine. Knowlton's (2008) article in *Bon Appetit* profiled Durham farmers

Alice and Stuart White, who grow organic vegetables and flowers on a 30-acre farm called Bluebird Meadows in Hurdle Mills, N.C. The article describes the Whites as part of a “foodie” community that supports local farmers and chefs who work together to produce high-quality food. Knowlton wrote about farmers he met at local farmers markets and provided an overview of the types of local food available in the area. This article is more of an overview than an in-depth piece. A great deal more detail could be included to tell the stories of the farmers, chefs and customers behind the local food industry in the Triangle and to explain the role sustainable agriculture plays in the community. Additionally, North Carolina chef Sara Foster, of Foster’s Market in Durham and Chapel Hill, N.C., regularly contributes recipes and columns to *Cottage Living*, and her recipes have been published in other national magazines, such as *Martha Stewart Living*, *Southern Living*, *Real Simple*, *Redbook*, *House Beautiful* and *Country Living*.

Sustainable agriculture in North Carolina has been a focus in magazines with a state-wide circulation. For example, *Our State* has published articles that focus on farmers, such as “A Hundred Years of Heritage,” which is about family farms in North Carolina that have existed for a hundred years or more. According to the article, the state began recognizing century farm families during the 1970 state fair and the Century Farm Families program has grown to include more than 1,500 farms (Westbrook, 2005). *Our State* has also covered farmers markets in North Carolina. One article described North Carolina’s five state-operated farmers markets in the Triad, Charlotte, Raleigh, Lumberton and Asheville (Blackburn, 2005). *Our State* has published additional articles about agriculture in North Carolina that were not available to the researcher.

Carolina Country, a regional magazine published by North Carolina's electric cooperatives, has published articles about sustainable agriculture in North Carolina. The magazine, like *Our State*, has covered family-run farms, such as an article about the Roberson family who have run their farm in Robersonville, N.C. for generations (Gery, 2005). The Robersons have had to change the crops they produce in order to remain independent from corporate farms, going from chickens to tobacco to running a local produce stand. *Carolina Country* also featured an organic farm in Hoke County that leases plots of land to help train farmers or aspiring farmers in organic crop production (Cruz, 2006). The Houghs have leased three, one-acre plots of land from their farm, Raft Swamp Farm, for less than \$200 a month to teach farmers organic growing practices that will help farmers preserve natural resources and carry on North Carolina's agricultural traditions. In a 2008 article, *Carolina Country* covered the local food movement in an article about CSAs that support local farmers in the Charlotte area (Miller, 2008). The article explained that many CSA members choose to join the organization to support local farmers and to eat healthy, locally grown food.

The coverage of sustainable agriculture in North Carolina by national and state magazines leaves room for longer, detailed articles. The articles in this thesis cover topics, such as community gardens and education initiatives, that have not been widely covered by magazines.

Based on the findings of this literature review, the articles in this master's thesis cover the environmental, economic and social aspects of sustainable agriculture in North Carolina. It seems that North Carolina has a growing movement of people who are interested in promoting sustainable agriculture through farming, education and

community initiatives. The researcher has provided details of how sustainable agriculture in North Carolina improves and protects natural resources in the state as well as how sustainable agriculture initiatives have affected the quality of life of individuals and local communities in North Carolina.

Research Questions

Having identified a gap in the extant literature when it comes to in-depth, narrative reporting on sustainable agriculture in North Carolina, this research has answered the following questions in three articles:

Article 1. What are sustainable farming practices? How do farmers in North Carolina produce fresh, locally grown food? What marketing strategies do farmers use to make their businesses economically viable?

Article 2. How do communities in North Carolina become involved with sustainable agriculture? In what ways does a community garden teach people about the environment and growing local food?

Article 3. What initiatives are helping North Carolinians learn about sustainable agriculture and local food? How do those initiatives fit into a larger picture of preserving and improving North Carolina's natural resources?

Method

This professional project consists of three articles appropriate for a feature or series in a magazine or local newspaper, such as the *Independent Weekly* or the *Raleigh News & Observer*. The articles are profiles of people and programs in North Carolina that work in and promote sustainable agriculture in the state. Unlike traditional news articles, the articles in this thesis provide in-depth detail as a result of weeks of shadowing and

interviewing the subjects for each article. The main sources of information for the articles were gathered from interviews. Before each interview, ample research on the topic and source, and studies of previous coverage were conducted. This ensured that plenty of background information was available on the topic, and it served as an aid for generating interview questions. Further, the research helped guide the organization of the articles to be as informative as possible, filling in gaps left by previous coverage. A list of interview questions were prepared before each interview though, inevitably, in the course of the conversation additional questions arose. Finally, before agreeing to the interview, each source was told that it was possible their interview would be published in a newspaper or magazine article in addition to being included in a master's thesis, so sources understood that what they said during an interview could appear in a local publication.

Interviews were conducted in-person and over the phone. In order to gather as much information as possible, several in-person visits were required. Scheduling of interviews took place in advance at a time and location that suited each subject's schedule. Though the subject knew that interviews could be published in the future, the interviewer tried to make the interviews as relaxed as possible, asking open-ended questions in order to gather the most detail, opinion and anecdotes. The interviewer took notes during interviews. Travel was funded by the Roy H. Park Fellowship.

In order to thoroughly cover sustainable agriculture in North Carolina, interview sources included farmers, members of community gardens, researchers, employees and volunteers working for nonprofit organizations that focus on sustainable agriculture initiatives, as well as relevant state and federal government organizations. One way new

sources were identified was by asking sources to recommend others to interview. Sources were also cultivated through online research and phone calls to organizations dedicated to sustainable agriculture projects. Examples of organizations in North Carolina involved with sustainable agriculture projects include The Center for Environmental Farming Systems, Carolina Farm Stewardship Association, Appalachian Sustainable Agriculture Project, Central Carolina Community College's Sustainable Agriculture Program, and Rural Advancement Foundation International.

Limitations

One limitation to this project is the researcher's layman knowledge of traditional and sustainable agriculture. While thorough research was done before beginning the project, the researcher has not had formal educational training in sustainable agriculture.

Another limitation of this project is that it was not possible to cover every topic and project related to sustainable agriculture in North Carolina. The researcher tried to choose subjects and topics that were not previously covered but avoid the trendiness of many environmental-related stories in the mass media. The resulting narrative articles provide more depth and detail as a counterbalance to typical coverage in magazines and newspapers, which tends toward brief, traditional news or feature stories that are not able to cover the topic thoroughly due to time, space and other constraints.

Chapter Breakdown

The thesis articles are in three parts, each addressing one of the three research questions indicated earlier.

The first article is a 4,900-word narrative profile of a small, sustainable farmer in Chatham County who has adopted creative marketing techniques over 17 years of

farming in an effort to remain financially solvent. The article describes what it is like to run a small farm and grow sustainable crops. The article also describes selling crops at weekly farmers markets, and it examines the economic challenges small, sustainable farmers must overcome.

The second article is 2,700 words in length and addresses the second research question: how do communities in North Carolina become involved with sustainable agriculture and what role does a community garden play in teaching people about the environment and growing local food? This article focuses on a community garden in North Carolina that has gotten local community members involved in sustainable agricultural practices. For this article, the researcher sought interesting stories that had resulted from work in the community garden. The article also describes how the community garden has affected the lives of its members and what they have learned about the environment and locally grown food through their involvement.

The third article is 3,900 words in length and addresses the third research question: what initiatives are helping North Carolinians learn about sustainable agriculture and local food and how do those initiatives fit into a larger picture of preserving and improving North Carolina's natural resources? This article focuses on an organization that sponsors sustainable agriculture initiatives in a community in North Carolina

CHAPTER 1

Betting the Farm: The Cost of Growing Green

By 8 a.m. on a Saturday, the walkway at the Carrboro Farmers' Market is crowded with customers eager to see what new, fresh produce the farmers have to offer. Vendors have set up tents and tables filled with produce, cheese, breads, sweets, crafts and plants. Kids run squealing toward the playground; adults greet one another as they stroll from stand to stand, filling their canvas bags with goods as they work their way through the noisy market.

After years of farming, Cathy Jones of Perry-winkle Farm knows the best way to attract customers is to start a conversation. That's why she places a large bucket filled with an unusual, tall, light green plant with spiked globes at the front of her farmers market stand. The plant's unusual appearance never fails to attract attention from customers.

"What *is* this?" one woman asks.

"It's a plant in the milkweed family called oscar, but growers call it monkey balls or hairy balls," Jones replies with a smile.

A regular customer walks by and overhears her.

"Cathy, are you talking dirty again?"

Once Jones gets shoppers' attention she hopes they find something to buy from the numerous vegetables and cut flowers she sells at her stand. She depends on sales at the market to support her farm.

Farming today means more than just growing produce. The agricultural system in the United States is complex. It is regulated by Congress and the USDA and affects the economy, international trade and global food supply as well as the environment and public health. Farms range from as few as one or two acres to hundreds of thousands of acres. Some farms use conventional growing methods, incorporating chemical fertilizers and pesticides, and some farms use organic growing methods that use no fertilizers or pesticides. Some farms are run by large companies with thousands of farm laborers, while other farms are maintained by one farmer.

Keeping a farm going takes hard work and a strong business plan, especially in these days of economic uncertainty; small farms are particularly at risk of failure. According to a 2008 report from the United States Department of Labor, the economic viability of self-employed farmers is expected to decline by eight percent between 2006 and 2016. The report suggests as land, equipment, seed and chemicals become more expensive, and as technology makes it easier for wealthy farms and corporations to produce more with less labor, small, self-employed farmers will have a harder time competing. This means small farmers will have to use more innovative business practices and marketing techniques in order to stay financially afloat.

For Jones, growing organic vegetables without chemicals is a passion; she is an advocate for fresh, local food and feels strongly about the quality of her land and the

crops that she grows and sells to customers under the Perry-winkle Farm name. Jones' challenge is to make enough money to support that passion.

Becoming a Farmer

Jones, 58, has spent the last 17 years as a small farmer in northern Chatham County. She wears her gray hair in two long, thin braids that almost reach her waist. She is 5 feet 9 inches tall and her ease of movement suggests the years she spent playing on community softball and volleyball teams. Jones usually wears baggy jeans, an old T-shirt and a wide-brimmed hat on the farm. If the weather is cool, she adds a loose collared shirt or a well-worn cream sweater with a small hole at the hem. Her fingernails and hands are usually blackened with dirt.

Jones did not grow up wanting to be a farmer. She was born in New York City and spent most of her childhood in a suburban neighborhood in New Canaan, Conn. When she was in high school her father moved the family to Greensboro, N.C., where he had grown up. Jones' mother died when she was young, so her father raised Jones, her sister and her brother. Jones always felt free to do what she wanted because she had her father's support.

“He'd say, 'I don't know what you're going to be when you grow up, but you'll be good.' He raised me to be a very confident young woman. That's what you need to pull off a hare-brained scheme.”

Jones went to Guilford College in Greensboro and to graduate school at the University of Georgia. She lived in the country outside of Athens while she was in Georgia and had her first organic garden. At the time, Jones felt that her lack of gardening experience was an advantage.

“I was studying psychology and statistics, so gardening was a diversion. There were no family farms or gardens in my background, but there were also no preconceived notions.”

During graduate school, Jones interviewed for a job as an affirmative-action specialist, but she decided she didn't want to work in the corporate world, so she left school and moved to Chapel Hill to help a friend who was opening a record store. For a few years, Jones worked odd jobs as a stone mason, carpenter and a collegiate softball and volleyball referee, and she was the caretaker of some land for a local dairy farmer. The dairy farmer had inherited the family farm along with a lot of debt. In 1983, the farm went bankrupt and the dairy farmer decided to sell the 250 acres of land. Jones had lived on the land for four years and did not want to leave, so she decided to write a business plan and apply for a loan.

“I went to Farm Credit and they were so ready to give the loan to someone else who would make payments,” she said. “I made up a farm plan and signed a 30-year mortgage. It was the scariest thing I'd ever done. At the time I was single, and I thought this must be like getting married. It's quite a commitment.”

After Jones bought 33 acres of the old dairy farm, which was sold off in pieces to different buyers, she began to apply sustainable methods to the land. The dairy farmer had used agricultural chemicals, leaving the soil in poor condition for growing. Jones knew how to improve the soil from her organic garden. Jones met Michael Perry playing community softball 13 months after she bought the land. Jones says she joined the team so she would have an opportunity to socialize more, but she ended up spending most of her time with Perry. Eight months after they met, Jones and Perry were married, and

Perry helped Jones pay for the land. They both worked off of the farm until 1991, when Jones began farming full-time.

As Jones got started on the farm, she says choosing sustainable growing methods was an easy decision. By farming without pesticides and enhancing the soil with nutrient-rich cover crops, Jones and Perry have improved the quality of their land and produced crops that are fresh, full of nutrients and safe to eat straight from the earth.

Sustainable agriculture is perhaps best known for its environmental aspect and commitment to social responsibility. The idea is to protect and improve the land by making sure no natural resources are depleted or polluted. This means returning to old farming methods like crop rotation, growing cover crops like millet and cowpeas that protect the soil from erosion, weeds and from losing nutrients, and using compost that naturally enriches soil instead of chemical fertilizers and pesticides. Social responsibility is tied to this idea; by protecting the environment, sustainable farmers also protect the neighboring community.

Economic viability is just as important as other aspects of sustainable farming, says Robin Kohanowich, the coordinator of the sustainable agriculture program at Central Carolina Community College in Pittsboro, N.C. Like any small business, a farm using good environmental practices must be profitable to survive. To that end, farmers like Jones have to learn more than how to grow their product. They also have to learn how to sell it at farmers markets, to wholesale vendors and community-supported agriculture programs.

A Week on the Farm

Life on the farm is driven by the market. Just about every day at Perry-winkle Farm is spent preparing for one of the three weekly farmers markets Jones and Perry attend.

To prepare for each market, Jones works on the farm for about 50 hours each week, often more during the peak summer season when workdays are longer. Jones and Perry sell crops at farmers markets about 35 weeks each year, from mid-March through December. Jones works on the farm full-time with a part-time, four-person crew. Perry works on the farm part-time and spends about 20 hours a week working as a brick mason away from the farm.

Farm chores get Jones and Perry out of bed early every day. There are chickens that need to be fed and let out of the hen houses by 6 a.m. each morning. By 8 a.m. Jones will be out in the field harvesting crops or weeding. She has a list of what needs to be done to assure a wide variety of fresh crops and cut flowers for customers to buy. Crew members, often CCCC students or local residents interested in farming, join Jones on the farm most days and typically work until 5 p.m.; Jones' work day often lasts well past that.

Tuesday: The First Market

The work week starts on Tuesday, the day of the first farmers market. Jones and one or two crew members harvest crops like lettuce, basil, arugula, Italian flat beans, yellow wax beans, kale, broccoli rabe, burgundy okra, eggplant and peppers. In the afternoon, Jones will take the harvest to the small market at Fearington Village, where she sold her first crops as a farmer.

Out in the field, Jones is a farmer and a teacher. One late September morning, she teaches the crew how to pick mature okra. It is important that only ripe okra is picked so customers get the best-tasting produce. Okra that isn't quite ready has more time to grow before next week's market. Burgundy okra grow from green plants that are about 4 feet tall and have many large green leaves. Two crew members stand on either side of a long row of the bushy plants and look for okra that is about 4 to 8 inches long. Jones tells them to bend the okra slightly in the middle to make sure it is tender and ready to be picked. The crew slowly moves down the row, filling baskets with long, red okra. Jones, a self-proclaimed "efficiency freak," gives them advice about how to stand and where to place their baskets. Jones relies on her body to work on the farm everyday and knows all the tricks for doing each task quickly and as comfortably as possible.

After they have picked okra, the crew will move on to the next crop or they may start on other chores, like washing greens in a large outdoor bathtub Jones and Perry have repurposed for cleaning vegetables. Once the vegetables are washed and dry, they are stored in bags, coolers and cardboard boxes in a large walk-in cooler until it is time to leave for the market.

By 3 p.m., the crew has helped Jones load a cooler of eggs, boxes and bags of vegetables and large white buckets of cut flowers into the back of her aging white pickup truck. Jones keeps her tents, folding tables, table clothes, baskets, paper and plastic bags, newspaper for wrapping bouquets, vegetable signs and sign clips in the truck so she is ready to leave for the small market at Fearrington Village once the produce is loaded.

Wednesday: The First Trip to Carrboro

The next morning, Jones and her crew go through a similar process to prepare for the Wednesday afternoon farmers market in Carrboro, when it is Perry's turn to go to the market alone. They harvest any crops or flowers they need for the afternoon market. Sometimes, leftovers from the Tuesday market are sold in Carrboro the next day. Jones often assigns crew members to work on a project in pairs. She says she feels like a coach assigning players to positions. One of the things that Jones likes most about the work on the farm is the friendships that are built.

“One of the things I think we grow out here is friendships,” she said. “Our family just gets bigger and bigger. We get to go to lots of weddings, and we've had four weddings here. It's very validating and very enriching. I love the people we have out here.”

Thursday: Cutting Flowers

On Thursdays, Jones works a half-day on the farm and saves the afternoon for errands in town like grocery shopping or going to the bank. Two volunteers come to the farm to work on small projects like harvesting greens or transplanting. Jones often spends the morning harvesting cut flowers, one of her most profitable crops, for the Saturday farmers market.

Cutting flowers is a tedious job. Jones uses a knuckle knife, a small hooked knife attached to a ring that she wears on one finger, to cut long stems of zinnias.

“I'm trying to strip off all the leaves that will be under water. If there are leaves they will deteriorate and cause algae, a flower's worst nightmare. It's very repetitious work, but work I just happen to like.”

Jones carries large bundles of flowers from the field and places them in clean buckets. She is very careful with the flowers because she wants them to last as long as possible for her customers. She makes a mixture of sugar, warm water, citric acid and bleach to keep the flowers fresh until market. When a customer buys a few stems, Jones always reminds them to trim the ends and put them in warm water so they last. She knows the quality of her flowers is one thing that brings customers back to her stand.

Jones knows the dollar amount for the crops growing in her field and this knowledge motivates her to keep working, even though that often means long days. When she returns to the farm on Thursday afternoons, she goes back to the field. One early evening in October, Jones weeds a lettuce patch, explaining that there is still \$250 worth of lettuce heads that need to be uncovered. As she works her way down the long row, she feels tired. The sun sets, and the air cools. Jones says this time of year comes as a relief after the long summer because the workdays are shorter, forcing her to stop working outside earlier. Still, any chore she does not get to is money Jones and Perry won't have to help them get through the winter.

Friday: The Greatest Harvest

Jones' biggest harvesting day is Friday, when she and the full crew prepare for the Saturday farmers market, the biggest market of the week where Jones and Perry make most of their money, ranging from \$800 to \$2,000 a market.

"Fridays we have a cut list for everything that has to be harvested," Jones says. "We just harvest, harvest, harvest. Some people start washing greens and prepping vegetables. We might have some time to make bouquets."

Around noon, Jones and the crew stop for lunch. Once they have eaten, they sit around the large wooden table on Jones' screened porch and pull apart marigold petals and break sprigs of lemon and purple basil for the salad mix. Eventually the marigolds and basil are added to bags with mustard greens and arugula. Making the salad mix is worth the time and labor to Jones because it is popular among her customers and sells for \$7 a large bag.

The crew spends the rest of the afternoon harvesting. They leave at 5 p.m., but there is still a long list of work to be done. Jones and Perry will work until 7 or 8 p.m. on a Friday, harvesting and washing vegetables.

Anything that doesn't get done on Fridays means taking less than usual to the Saturday market and having less to sell to customers.

Saturday: The Big Market

The alarm goes off at 4 a.m. on Saturdays. When the market opens at 7 a.m., Jones is still putting the finishing touches on her stand. She spreads purple patterned tablecloths over the two main tables and sets up buckets of cut flowers and baskets of greens and other vegetables. Jones places a display rack for bouquets and a few buckets of flowers in front of the stand. On another table, she puts down a tablecloth patterned with red chili peppers and arranges baskets of green and red bell peppers, jalapeno peppers, hot banana peppers, Italian frying peppers, Hungarian peppers, poblanos and habanera peppers, what she calls her pepper department. Jones organizes the peppers into two categories, hot and sweet.

The Perry-winkle Farm stand stays busy most Saturday mornings. Jones knows that activity draws customers to her stand, so Jones, her sister and niece sell produce and

make bouquets all morning. Local chefs stop by to pick up special orders Jones prepares for them ahead of time. Perry sells eggs that are so popular he keeps an egg list so regular customers are guaranteed their weekly dozen. By 10 a.m., the eggs will be sold out.

When the Saturday market closes at noon, they pack up and head back to the farm to start their weekend.

Days of Rest

Jones and Perry try to rest and take time off from the farm on Sunday and Monday. They still have to do daily chores like feed the chickens and let the chickens in and out of the hen houses each morning and evening, but they try to stay out of the fields until Tuesday. Jones says they hardly ever leave the farm on Sundays and try to read and rest as much as they can before the next week begins. Jones uses this time to catch up on reading, especially in trade magazines like *Growing For Market* and *Cut Flower Quarterly*.

The Economics of Small Farming

Though Jones and Perry have been farming for years, some years are financially better than others. When they started, Perry's brick masonry business supported them and covered the cost of expenses like seed for new crops and groceries. Jones would work as a carpenter or collegiate referee, and she would block off the summer for farming. Still, working away from the farm was hard for Jones because she was so eager to start her farming business.

As the farm grew, Jones was able to spend more of her time working on her land. In 1991, Jones took her first harvest to market. It has been 10 or 12 years since Jones has had to work off of the farm at what she calls "public work."

Despite the farm's success over the years, Jones says they still wonder if the farm will cover their expenses. On average, Jones and Perry make about \$15,000 a year. The farm brought in \$52,000 in 2007, but after labor, land payments and other expenses not much is left for the farmers. Jones and Perry have income from the farm for the nine months that they sell crops at farmers markets. They depend on savings for the winter months.

"We have to ask ourselves, does the farm make us enough money to get through the winter?" Jones says. "In the past, it has run out."

To keep their expenses low, Jones says they live simply and don't spend beyond their means.

"We live on next to nothing," Jones says. "We don't go out to eat a lot. I don't have fancy clothes, but this is what I want to do. It was my passion, and anything you can do to follow your passion is good. We just keep our spending within what we can afford."

For Perry, living frugally is a point of pride.

"I think it could be said that we live within our means," he said. "I'm pretty proud of that."

Jones says every small farmer has years when they struggle financially. She and Perry know of farmers who take out a \$5,000 loan each year to pay for seed and operating expenses. Other farmers rely on community-supported agriculture programs, CSAs, to bring in money early in the season that pays for seed and operating expenses. With a CSA, farmers sell shares of the crops they will grow in the upcoming season to members of the community. Throughout the growing year, farmers distribute crops to CSA members each week. Jones sees the benefits of a CSA, but she has chosen not to sell

produce that way because she prefers the customer interaction she gets at weekly farmers markets.

“I farm for the ooh’s and ahhh’s,” Jones says. “I want to hear that those potatoes were the creamiest they’ve ever had.”

Operating the farm adds expenses to their budget. Last winter, Jones and Perry spent between \$3,000 and \$4,000 to put up a new 8-foot fence around the field where they grow most of their crops to prevent deer and other animals from eating their livelihood. In the 2007 growing season, Jones lost most of her pepper crop to deer, and she lost other crops to the drought. She says it was one of the hardest years Perry-winkle had.

As one cost-cutting measure, Jones dropped her official Department of Agriculture certification, an \$800 expense. Under the Department of Agriculture’s National Organic Program, growers who want to label their produce as organic must meet national organic standards and undergo property inspections by local agents. Growers pay a fee to be certified and fees for annual inspections. To become certified organic, growers submit a three-year history of the land, and an inspector visits the property to make sure no chemicals are being used.

“We were certified organic in 1995 and stayed certified for eight years. We dropped certification the year after it cost \$800 to certify,” Jones says.

Although Jones farms all her crops organically, dropping the certification meant she could no longer sell produce to wholesale markets that require certification for organic produce. Jones found that her farmers market customers still bought her food because they knew Jones and could talk to her if they had questions.

There are also expenses from unexpected and extraordinary circumstances. Eight years ago, Perry had to have a pacemaker put in because he had an irregular heart beat. Last year, Perry had major cardiac distress that kept him from working on or off the farm from February until the end of the year. During that time, Perry spent a few days in the hospital and ended up with an \$80,000 hospital bill. Perry's health insurance had lapsed, and the insurance company would not renew his policy because of the pre-existing heart condition.

Unable to pay such a large hospital bill, Jones and Perry asked to have their debt forgiven by the state.

Jones has her own health insurance policy; Perry asked her to get her own coverage when they were first married. The policy costs Jones \$3,000 a year, and, despite Perry's experience without insurance, Jones wonders if it is worth the money.

"We've paid into it for so long I'm afraid if we drop it, something will happen," she says.

Jones and Perry minimize their medical expenses by going to public clinics and visiting UNC's dental school for cleanings. They are friends with a doctor who will sometimes see them without charging a fee. Jones says she feels lucky to live in a community that takes such good care of them.

When it comes to another financial reality, retirement, Jones hopes they will still be able to rely on the farm.

"I don't really have a retirement scheme figured out," she says. "This is our investment, our insurance policy. I'm 58. I can do this for a good while longer."

Jones and Perry have five acres across a creek from the farm that they are willing to part with to raise money for retirement when the time is right. But Jones hopes they will be able to farm well into their 80s. When they are older, Jones says, she will think about growing crops on a smaller piece of land.

“When we’re 80, we might just have a tiny garden or maybe we’ll have a CSA. I still want the interactions with people, though.”

Making a Farm Work

Jones has developed strategies to market her crops that have kept the farm economically viable. She and Perry spend a lot of time talking about ways they can improve business, by adding new crops or diversity in the kind of goods they sell, and they try new marketing methods to see if they can attract more customers.

When Jones was first farming full time, she wanted to grow potatoes as one of her early spring crops. Other farmers in the area told her that there was no money in selling potatoes, but Jones decided to try introducing different varieties at the farmers market. Jones grew nine different types of potatoes, some like Yukon gold that were more familiar to customers, and others, like all-blue potatoes or cranberry red potatoes, that customers hadn’t seen grown in the area before. Today, Jones’ best-selling crops are the potatoes, and she says that’s where her farming career really got started.

Jones uses marketing strategies to help draw customers to her stand. When she’s not making bouquets of cut flowers or helping customers, Jones is replenishing the supply of vegetables on her display. When she runs low, she moves the produce from a large basket to a smaller basket because she has found that customers don’t like to buy produce that looks like it has already been picked through.

Jones has also diversified her products, starting with vegetables and adding on over the years. A few years after Jones started selling at weekly farmers markets, she added cut flowers to her stand. After the success of cut flowers, Jones and Perry added eggs to their business six years ago.

Perry takes care of the 250 chickens that live in three mobile hen houses on the farm. He keeps four different types of brown egg-laying hens: barred rocks, black australorps, white rocks and buff orpingtons. The hen houses are old tobacco trailers and an old camper that Perry has transformed into hen houses by adding rows of nesting boxes stacked five high where the hens lay eggs. Perry lets the chickens in and out of the hen houses each morning and evening, and during the day the chickens roam in temporarily fenced sections of the farm. In the evening, Perry collects eggs from the nesting boxes in the back of the hen houses.

The chickens serve two purposes for Jones and Perry. They lay the eggs, and the chickens help keep the farm's soil healthy. Jones and Perry move the hen houses around the farm every two to three weeks to give the chickens a chance to eat grass and forage for bugs. The chickens help eliminate pests, and chicken manure enriches the soil. After a period of time, Jones and Perry will plow the land and plant cover crops, preparing for the next growing season.

Though Jones says the farmers market accounts for 95 percent of her sales, she has also built relationships with chefs at local restaurants. Jones delivers bundles of cut flowers to Elaine's in Chapel Hill and most weeks prepares special orders of produce for Bret Jennings, the chef at Elaine's. Jones sells her salad mix and produce to restaurants like Crook's Corner, BBQ Joint, GlassHalfull, Panzanella, and Neal's Deli. Jones says

for a restaurant the advantage of buying her food is that it is so fresh. For Jones one advantage of selling to local restaurants is they often will list the Perry-winkle Farm name on the menu, giving the farm free advertising to restaurant customers.

Taking Care of the Earth

Despite the sacrifices they have made, Jones says being able to do exactly what she wants to do is worth it. She is passionate about growing fresh food using methods that improve her land and take care of the environment. Jones has been an advocate for the health benefits of locally grown organic food and is a board member of Toxic Free NC, a nonprofit that opposes chemical pesticides and advocates for the use of natural alternatives.

“The question is, do you want to poison the environment or take care of the environment,” Jones says. “We are borrowing the land from future generations. I think it’s a no-brainer. You’ve got to take care of the environment and your own health.”

Jones also feels strongly that it is important for people to know where their food comes from.

“We need to know what we put in our bodies, where food comes from,” she says. “There are too many opportunities for their diets to be [expletive] now. I sell a head of broccoli, and it’s fresh broccoli that I grew from the soil.”

Jones learned to farm on her own by reading and taking a few master gardening classes. Now, she is the teacher. Over the years she has helped aspiring farmers learn about organic farming, and Perry has held education sessions for farmers interested in mobile hen houses. One Friday morning, Jones explained how plants do the work of restoring the soil.

“Cowpeas will climb the millet and grow much taller than growing alone. The cowpeas put nitrogen in the soil,” she says. “The millet adds organic matter and feeds soil microbes. They are the digesters. They make plant soluble food. The soil microbes produce a food that lettuce will eat and lots of beautiful insects feed off the millet nectar, and if they are happy they help keep control of the pests.”

Jones takes a long look out over rows of healthy plants in her beautiful, sunny field. The air is cool. Rows of sunflowers and zinnias sway gently in the breeze. Everything as far as the eye can see is green.

“This makes me feel like a good farmer, like I know how to grow something,” she says. “There was no nitrogen before. Now everything is so green.”

CHAPTER 2

A Garden for Healing

Every garden tells a story. In some gardens, the story is about the transformation of seeds to vegetables and flowers. In others, the story is about the gardeners. The community garden at the Urban Ministry Center in downtown Charlotte holds stories of pain and loss, healing and renewal. In this garden, the gardeners are homeless, and they've found ways to repair their lives, finding meaning as they work in the soil.

If you visit the Urban Ministry Center community garden, you will likely meet a woman who goes by the name of Cleo, a regular who has elevated gardening to an art form.

Cleo is homeless and has been coming to the Urban Ministry Center, a nonprofit, interfaith organization that serves people facing homelessness and poverty, for the last 15 years. She is a thin woman, in her early 60s, with short hair she sometimes covers with a scarf. Her hands are rough and dry, perhaps from time spent living outside and working in the garden.

Cleo doesn't open up easily to strangers, so Don Boekelheide, the center's community gardener, shares her story with visitors. Cleo had asked if they could try growing watermelons in the garden, but Boekelheide wasn't sure the garden space would accommodate the crop. About the same time a local hardware store donated some

Charleston Gray watermelon plants that were not selling, so Boekelheide decided to give it a try.

When he brought the watermelon flats to the center, Boekelheide said Cleo's eyes sparkled when he told her about them. Cleo nursed the plants from containers until they were ready to be transplanted to the bed.

"She pulled the weeds, took care of the watermelons and watered them," Boekelheide said. "She saw that her watermelons were surviving when others weren't. She saw that if she paid attention and stuck with it patiently, something very small can change enormously. That's something people see in the garden."

Cleo said she started with five watermelon plants in four garden beds, eventually producing about 30 watermelons.

"When I saw my first watermelon, I had to show it off," she said.

Cleo was so proud of her watermelons she entered some of them in the center's annual art auction to raise money for the center and local artists.

"Typically what people do is paint paintings in the old train station," Boekelheide said. "Instead of doing a painting, we talked a little bit about what conceptual art is, so she sold them at the art show. I can't think of an artist who can match a watermelon."

Unlike many community gardens, the Urban Ministry Center's community garden is more than a place where people come together to grow food. It is a space that addresses poverty by providing Charlotte's homeless population with a place to grow and eat healthy, fresh food. But even more, it is a place for transformation and healing, where the center's clients can learn new skills, take care of the earth and discover opportunities to take care of themselves.

Homelessness in Charlotte

Since 1995, the Urban Ministry Center has served Charlotte's homeless by showing them love and compassion and providing them with tangible help, a mission inspired by the biblical commandment to "love thy neighbor as thyself." The center's staff refer to the people they serve as "neighbors" to make them feel welcome and to create a sense of common ground.

The center feeds its neighbors lunch everyday in its soup kitchen and offers the use of showers, laundry facilities, phones and mailboxes. Staff and volunteers help them obtain North Carolina identification cards, Social Security cards and birth certificates; they provide housing and employment counseling and support groups for women's health, grief and substance abuse. Volunteer doctors and nurses provide basic medical treatment.

Poverty, homelessness and hunger are problems that are intrinsically linked. The North Carolina Department of Health and Human Services reported in a 2008 survey that 12,371 people across the state were homeless.

In Mecklenburg County, which has a total population of 827,445, Second Harvest Food Bank, a nonprofit agency that distributes food to shelters, soup kitchens and other agencies, reported that 105,913 individuals are living at or below the poverty line. On any given night there are more than 5,000 people who are homeless people in Charlotte and Mecklenburg County, according to a report by A Way Home, a nonprofit organization working to reduce homelessness in the area. The number of homeless may actually be higher; it is difficult to get a firm count on a transient population.

Pantries, homeless shelters and soup kitchens serve more than 1 million people who are homeless or living in poverty each year in North Carolina, according to a Second Harvest Food Bank report. The soup kitchen at the Urban Ministry Center is one of 11 soup kitchens in Charlotte. The center feeds between 300 and 400 people each day, and the numbers have increased with the severity of the economic downturn. According to the center's Web site, for several days in December 2008, the soup kitchen served lunches to a record 415 people.

Besides meeting neighbors' basic needs, the Urban Ministry Center runs a program in an old train station on the property called CommunityWork945 that includes opportunities for neighbors to participate in art, street soccer and community gardening.

Beyond the programs and services it offers, the Urban Ministry Center is a place where neighbors can spend the day and comfortably visit with friends. On a sunny afternoon, it is not unusual to find the center's yard filled with people perched on every surface – benches, tables, stairs and retaining walls.

Community Gardening

According to the American Community Gardening Association, a community garden, in the most basic sense, is any piece of land where a group of people comes together to garden. ACGA estimates that there are between 18,000 and 20,000 community gardens in the United States and more than 30 community gardens in North Carolina.

Community gardens are run differently depending on the needs and interests of the gardeners. Lucy Bradley, an urban horticulture extension specialist at North Carolina

State University, says that part of the beauty of community gardens is that they can be tailored in a way that best addresses the setting in which they are cultivated.

Bradley says that community gardens may follow a small farm or community-supported agriculture model with shared beds that the gardeners plant and harvest together or the garden may have individual plots where one person or family could choose the crops they grow. In some cases, community gardens have individual plots where gardens grow small crops of their choice and shared beds for crops that require more space. Some community gardens are organized by a neighborhood or town, and others are affiliated with schools, nonprofits or churches.

A common goal of community gardens, Bradley says, is to give people a chance to learn about plants and the environment.

“You learn basic biology and botany, but on a much broader scale you learn about environmental science,” she said. “You learn how the actions you take in your garden affect birds and fish, all of the fun things that are tied in with growing plants, germination, harvesting, collecting seeds and using them again.”

Community gardens also help people of varied means and backgrounds find common ground with others.

“One of the things I love about the garden is that vegetables and fruits just don’t have any respect for the things we get caught up in as humans, like what your ethnicity is, or what your socioeconomic, race or education level is,” Bradley said. “It opens up a door for people to interact across a lot of boundaries where they might not normally.”

Building Community

The Urban Ministry Center's community garden is on a small hill behind the main building and has three levels. Small blueberry bushes grow on the bottom level adjacent to the parking lot. The fenced, flattened middle level has six raised beds on about 3,000 square feet where the gardeners grow crops like lettuce, cabbage, tomatoes, okra, squash and jalapeno peppers. Near the beds is a small herb and garlic garden and a painted stone table with benches. In the upper level, gardeners grow sunflowers, wildflowers and watermelons.

The center's community garden, which was started in 1997, provides fresh produce for the soup kitchen and has a "you pick" area where neighbors can pick vegetables to eat on the spot or take with them.

Boekelheide said the community garden is effective as an outreach program because neighbors, staff and volunteers work together in the garden.

"The garden is the closest program to the neighbors. It's different from other services where they are on the other side of the desk," Boekelheide said. "We're all equal before the tomatoes."

One of the ways the Urban Ministry community garden helps its neighbors is by setting an example for healthy living.

Boekelheide, who also teaches vegetable growing classes at Central Piedmont Community College, has a lot to teach neighbors about growing healthy, sustainable food. The community garden uses organic growing methods, and Boekelheide says they depend on the sun, cover crops and compost for their harvest.

“We recognize that vegetables are adapted to tillage, and we use compost and cover crops to keep the soil in shape,” he says. “We want to build a lot of diversity for the landscape and build a habitat for beneficial insects.”

Boekelheide says using organic growing methods is good for the environment and makes sense for the Urban Ministry Center’s community garden as a metaphor for life without chemical dependency, an idea the Center encourages for the neighbors.

“If we want healthy people who are affirming who they are without turning to various things to escape reality, let’s do the same thing with the landscape by supporting it in healthy ways,” Boekelheide said.

By getting neighbors working outside in the garden, Boekelheide hopes to encourage healthy activity. He said that digging in the earth on a sunny day can’t help but lift people’s spirits, a welcome respite for people experiencing extreme poverty.

“The people who come here to eat, their lives are pretty [expletive],” he said. “We let our brothers and sisters live in poverty. People fall through the cracks; people who could be working and having better lives.”

Boekelheide hopes being active in the garden helps neighbors feel better in mind, body and spirit. The food they grow gives them a sense of accomplishment and nourishes their bodies, and for many neighbors, gardening reminds them of happier days.

“The garden gives people time to get back to what they know,” Cleo said. “For me, it’s memories of when things were fun, of gardening with my grandmother.”

Ray’s Story

When Ray Isaac left South Carolina, where he grew up and his family grew most of their own food, he had no idea he would end up gardening in a city like Charlotte.

Isaac was one of the neighbors who helped build the gardening program and has stuck with it over the years.

When he first came to the center, Isaac said he was living in a graveyard off Graham Street after his house had burned down. He walked to the center one day to get an identification card and lunch. He kept going back, and over time, the center changed his life.

“When you’re on the street, you have no place to go. At the center, you might get a small job, shoot the bull, get food or Newport Lights,” Isaac said. “The center was like an outlet for me. It’s like that for a lot of people today.”

Isaac had spent some time in prison and was in and out of jobs. He started spending more time at the center. Through the art program, he learned that he could paint. He played street soccer and would help out with small jobs.

Boekelheide said as soon as he started creating the garden space, Isaac came to help.

“He came out and told me how I should plant the garden,” Boekelheide said, laughing. “He was much more of a tough guy back then, and the garden was part of his transformation. He is a really good guy and there was no reason he should end up on the street, but he was an offender and had no place to go.”

Isaac started gardening and painted parts of the mural on a wall in the center’s parking lot.

“It was the homeless that did it, and it was so beautiful,” Isaac said of building the garden. “The garden is another outlet for people with no other goals. It’s amazing to see a bunch of tomatoes growing, and in the center of Charlotte.”

Today he works as the artworks assistant, keeping the art, soccer and garden programs running smoothly and helping with maintenance and repair of the buildings. Isaac lives in an apartment now with his family.

“You have to experience it to know the severe pain you go through, but you can thank God for giving you an open door,” Isaac says.

Boekelheide says that Isaac is an asset to the center because Isaac is able to listen and understand what neighbors are going through.

“He can reach people in a way that those of us who come in with a very different life experience can’t,” Boekelheide said.

Working with Boekelheide in the garden, Isaac said he learned about growing food without pesticides, and it opened his eyes to the benefits of growing healthy, fresh food. Isaac sees community gardening as a solution to homelessness and other social problems. He thinks that community gardening programs could help others learn new skills and the value of growing their own food.

“To stop homelessness and begging, why not make a garden? The city is growing all the time. We should grow more garden programs and have children learning skills for life,” Isaac said. “This will stop things going on in the city of Charlotte. People could sell goods, give back to the community and learn how to survive.”

Isaac said that spending time in the garden, appreciating its beauty, gives hope to people who are down on their luck.

The center has asked other neighbors to join the staff over the years, but Isaac’s story is not the norm.

“We provided him a role that many folks who are on the street don’t get to have,” Boekelheide said. “On the other hand, there are millions of Rays in America and around the world, good-hearted people who made some mistakes when they were younger who find it very hard to find a legitimate place in society.”

Boekelheide said the relationships like the ones he’s made over the years with Ray and Cleo are one of the garden’s greatest assets.

“It’s through these informal contacts that people build a capacity to transform and get out of the cycle of poverty,” he said.

By spending time together in the garden, Boekelheide has gotten to know Cleo better and has been able to help her confront and begin to address some of her problems.

“The advantage of us working with her over the years is that she’s now opened up to talk more honestly about the situation she actually faces,” he says. “She used to say, ‘I’m not homeless,’ or ‘I have a place to go, everything is fine.’ It’s hard to help when she says, ‘I don’t have the problem you say I have.’ Now we have a much more honest relationship.”

Beyond the Garden

Boekelheide hopes that the center’s garden can set an example for other community gardens in the sustainable way they grow crops and in the way they treat neighbors.

“The environment and food movements need to not just be about upper and middle class people having fresh arugula,” he says. “We have to be mindful of making sure that everybody, including homeless people, has a really nutritious diet.”

Boekelheide would like neighbors to have more opportunities to produce food and learn marketable gardening skills. He is working with a small farming program that would give the neighbors a half-acre of land on which they could grow more crops for the center and to sell at a local tailgate market.

Beyond the food the garden produces, Boekelheide says it is the people who make the Urban Ministry Center's community garden special.

"If someone asks me about some of the other gardens I work with my response is, 'oh, well, we had a great tomato crop or this year was interesting because the okra was gigantic,'" he said.

When he's asked about the center's garden, Boekelheide said the first things he thinks of are the people and the work they've done together to create a peaceful, welcoming space.

"All gardens are human stories, as well as stories about plants and animals and the soil," he said.

CHAPTER 3

Growing Food, Building Community

Later this spring, people living in Wayne County will have a new source for buying locally-grown, fresh produce: a “veggie bus” run by Wayne Food Initiative, a collaborative group of community members who are working together to create programs that support a healthy, local food system.

The veggie bus will be a farmers market on wheels by way of a refurbished school bus. Local farmers, community gardeners and students will use the bus to transport and sell fresh produce to low-income and outlying communities in the county. Customers will be able to browse along the bus’s long center aisle, choosing among vegetables, fruit, herbs and jars of locally made pickles and chow-chow. The bus will have a regular route so customers know which days to come out and shop.

Like the veggie bus project, Wayne Food Initiative is a result of collaboration. By working together, the partners hope to create a food system that promotes good health in the community, protects the environment and increases business for local farmers.

Wayne Food Initiative has connected leaders from farms, gardens and sustainable agriculture programs so they can share resources and operating tips – from advice on the best way to grow broccoli to how to get students interested in sustainable agriculture. The partners are also working together to create new programs to meet their goals, and they

are contributing ideas to a statewide movement to build a sustainable, local food economy.

Food in Common: Wayne Food Initiative

Wayne Food Initiative formed in the fall of 2007 when Nancy Creamer, a professor of horticultural science at North Carolina State University and the director of the Center for Environmental Farming Systems, held a meeting for community members in Wayne County who were interested in sustainable agriculture and locally grown food.

Since 1994, the Center for Environmental Farming Systems, a partnership between North Carolina State University, North Carolina Agricultural and Technical State University and the North Carolina Department of Agriculture that provides research and education in sustainable agriculture, had researched and run programs on its farm outside of Goldsboro but had not worked on projects with people from the community. Creamer wanted CEFS to be more involved, so she held a meeting to see if the community was interested. She invited anyone in Wayne County who worked with food – farmers, local government agencies, educators, master gardeners – and asked them what they wanted to do.

“We asked folks what is going on, what needs to be happening, what are the challenges and what opportunities are there,” said Tes Thraves, director of Wayne Food Initiative.

The group identified four areas – youth, creating new markets, farmer support and community outreach – that were important to them, Thraves said. From there, Wayne Food Initiative partners, a group of about 30 community members, started meeting

regularly to figure out how to reach their goals and serve a community of about 113,000 people in a setting with a rich agricultural history.

One thing the Wayne Food Initiative partners learned during the first few meetings was that there were groups in the community who were working separately to achieve some of the same goals. Since its formation, Wayne Food Initiative has looked for ways to expand existing programs, like CASTLES (Center for Academic, Social, Technology, Literacy and Economic Solutions), an after-school program in Goldsboro that has a student-run garden, the peace garden at Wayne County Public Library and the “mini mobile farmers market” started by Wayne County Health Department.

“We were really intent on starting with what was going well, our strengths, and figuring out how could other partners support what was going on at the library, for example,” Thraves said.

Now that the programs are working together as Wayne Food Initiative, members are pooling their ideas and resources to create local food programs that address education, the environment, nutrition, cultural diversity, public health and support for local businesses.

One of the partners’ goals is to get youth interested and active in working with sustainable agriculture. The CASTLES after-school program is an example of a Wayne Food Initiative partner that has had success teaching youth about the environment, nutrition and growing food by engaging students in a school garden.

Gardening After School

The CASTLES after-school program has a special method for getting students excited about learning: lessons from science to art always include the school garden.

One afternoon, a small class of first-graders begin their session singing to the tune of “The Farmer in the Dell.”

“The gardener plants the seeds, the gardener plants the seeds, deep down inside the ground, the gardener plants the seeds,” they sing.

The first-graders clap and wiggle as they sing. Diane Conception, the first-grade teacher, says her students are enthusiastic about the school’s garden. The students’ enthusiasm extends to their lessons in math, science and language arts because Conception works the garden into all of the lessons.

For example, first-grade students keep journals where they write sentences using garden vocabulary words, and they draw pictures of seeds and plants. In their math lessons, students count the corn, pea and radish plants they have grown from seeds in cups in the classroom. They might add together the number of corn and pea plants and then subtract the radishes.

For science, they talk about the basic ingredients needed to grow a plant – soil, sun and water – and they learn about the process of growing a plant from a seed to a plant that is ready to grow in the garden to a vegetable ready for harvesting.

The students measure the plants’ progress each week, recording growth in a data table that tracks the name, description, habitat and student observations. When the plants are strong enough, the students will transplant them in their bed in the CASTLES garden.

CASTLES is the after-school program at Dillard Academy, a public charter school in Goldsboro, for children in kindergarten through sixth grade who are performing below grade level and need to improve their academic performance. CASTLES offers

tutoring, character-building lessons on subjects like drug and gang violence prevention, and activities like art, music and gardening.

Cheryl Alston, a retired high school teacher, started the CASTLES garden four years ago. Alston first tried using a garden in her lessons with high school students and saw that working in a garden was a good way to engage students in learning. She thought a garden would be a good way to reach students in the CASTLES program.

“Most children learn by doing,” Alston said. “The traditional kind of learning, being talked to by a teacher in a classroom, many times does not work for many children, and we found that it did not work for these children. Having them actively participate worked. They learn by touching and doing and seeing. Everything starts to make sense to them.”

The CASTLES garden’s first season was a success, and today students from all grade-levels have beds where they grow vegetables in the 1.5-acre garden.

The students learn from the gardening activities and don’t realize it because they’re having fun, says Danielle Baptiste, the director of the after-school program. Teachers have used students’ enthusiasm for the garden to teach concepts students have had a hard time learning, like teaching fifth graders how to count money.

“We started selling produce to get them interested in how to handle money,” Baptiste said. “They were interested because they had worked on that produce. It helps kids learn and have something they care about.”

Working outside in the garden also helps students stay focused in the classroom.

“Kids with behavioral problems go out to the garden and come back quiet and ready for class,” Baptiste said. “It helps them mind, body and spirit.”

The CASTLES garden is more than a classroom tool. The garden also helps nourish Dillard Academy students and members of the local community.

Most of the students who attend the school come from families who live below poverty level. Baptiste says that only one child at Dillard Academy buys lunch; the other 149 students qualify for free lunches through the National School Lunch Program, which provides free or reduce-priced lunches to children from low-income families. Most of the children enrolled in CASTLES are Dillard Academy students, though some students from other Wayne County schools are enrolled in the after-school program.

Baptiste said many of her students' families do not live near or have transportation to local grocery stores, so students do not have regular access to fresh, healthy produce. Instead, they end up eating canned food or junk food purchased at stores within walking distance from home.

“A lot of kids’ families only go to the grocery store once a month,” Baptiste said. “Can you imagine getting most of your food from gas station convenience stores? It’s mostly canned goods, junk food and some fried chicken or hot dogs.”

The produce grown in the CASTLES garden often goes home with students and staff.

CASTLES students donate produce to the school’s food pantry, which provides nourishment and helps students understand community service, Baptiste says.

The garden has also provided an avenue for fundraising for CASTLES programs. Baptiste says that as they got started, the garden produced more food than the teachers expected.

“We had tubs and tubs of cucumbers one year and some of them were bitter,” she said. “One teacher said we should pickle the bitter cucumbers. She brought in recipes, and the kids learned about measurement. The kids were peeling vegetables, some were making the canning concoction, and the staff would take a box of cans home with them to be cooked.”

The teachers decided to set up a tent in front of the school and allow students to sell produce from the garden and vegetables they canned. The money they make helps pay for summer programs. The teachers allowed students to suggest new items, like movies and video games, for CASTLES to buy for their fun activity time.

Baptiste said that having a garden to work in has had a positive impact on her students. Students, who provide care for their plants as they grow from seeds to vegetables, learn about responsibility, and they have become willing to eat more vegetables because they grew them.

“It profoundly affects the future of their eating habits,” she said. “These are kids who did not like eating vegetables and their parents didn’t know how to prepare vegetables. Even in the cafeteria, they throw away less of their veggies. They have expanded their palates.”

Through its use of the school’s garden in the classroom, the CASTLES program addresses the Wayne Food Initiative goal to give youth opportunities to become leaders in the local food system.

Another Wayne Food Initiative partner program that works with youth is the Wayne County Public Library’s community peace garden. The library has used the

garden to bring people from different cultural backgrounds together and to give youth opportunities to work outside and learn about plants.

Making Peace in the Garden

For Shorlette Ammons-Stephens, the children's librarian at Wayne County Public Library in Goldsboro, starting a library community garden was a way to bring people together and celebrate different cultures.

The idea for the library's peace garden came three years ago, after Ammons-Stephens, who is black, was confronted by a library patron who made a racist comment. Ammons-Stephens was shocked and angered by the remarks.

After the confrontation, Ammons-Stephens worked with the library's director to find a way to give people in the community opportunities to learn about other cultures. They came up with the idea of starting a community garden that would bring people together over common ground and celebrate the community's cultural diversity through the food that is grown.

"We wanted to provide a safe place for people to express themselves and their cultural heritage," she said. "In the South there is no better way to do that than over some greens."

The library's organic peace garden is a 50-by-50 square-foot plot behind the library building in downtown Goldsboro. There is no fence around the garden, and anyone in the community can work there and harvest produce.

The library garden has celebrated different cultures by growing vegetables and herbs that are important to cultural food traditions like hot peppers, bok choy and collard greens. Ammons-Stephens said it was fun to get community members to try for the first

time foods from other cultures. She said community members were excited to share their heritage and would take produce from the garden and return to the library with dishes and recipes to share with the staff.

“It was nice to connect people to the food they came from,” she said.

The garden has also brought people together who might not otherwise meet. Ammons-Stephens said one woman, Isidora, would bring her young twins and her older daughter to the garden.

“She spoke little English, and we would work side by side and only exchange a few words,” Ammons-Stephens said.

Over time, Isidora took classes to learn English, and Ammons-Stephens said it was fun to be able to communicate with Isidora more and more, an interaction she may not have had without the garden.

The garden has also given Ammons-Stephens a chance to talk to people about organic growing methods. She says that she has had to turn down offers from community members to apply chemical fertilizer to help the garden grow. Instead, she talks to them about alternative growing methods and the environment.

“The garden empowers people to make good choices,” Ammons-Stephens said. “We want to see the library as a vehicle to wellness. We’ve beefed up the collection for gardening, recipes, nutrition and also things like yoga.”

And the garden serves as a place for children to learn about growing healthy food. Ammons-Stephens designed garden and literacy programs for summer camp groups, including groups from CASTLES.

She says there's nothing like seeing the kids' busy hands pulling weeds in the garden. The campers had fun making food art with vegetables they picked from the garden and attending writing workshops where they learned to write stories in garden journals they kept throughout the summer.

Through her partnership with Wayne Food Initiative, Ammons-Stephens has started an emerging youth program for young adults, ages 13-25, in the community.

The emerging youth program, one of the first new programs Wayne Food Initiative has started, will involve youth in building a food movement in their community by attending workshops, studying entrepreneurship, building urban community gardens and taking field trips to visit other local food programs in the state. The program received a \$10,000 grant from Heifer International, a nonprofit that works to end hunger and poverty, so youth participants will receive small stipends for their work.

Wayne Food Initiative partners hope that youth in the program will be able to build more community gardens in abandoned lots in town and educate adults about connections between local food, nutrition, health and the environment.

Ammons-Stephens hopes that the program gives youth the confidence to advocate for something they believe in, whether it is access to locally grown food or another issue that is important to them.

“I want them to see that the choice is there, and they can advocate for something, and that they deserve to eat good food,” Ammons-Stephens said. “There is power in knowing they can influence their community.”

Ammons-Stephens advocates for food justice; that is, getting fresh, healthy food to populations who may not have access to it because of high cost or having fewer opportunities to buy or grow fresh food.

“I care about my community, and I want to see people thrive,” she said. “I want to see access and opportunity afforded to everybody. I believe life should be as fair as we can make it, and I feel like I’m just doing my part.”

She hopes that the emerging youth program will set an example for the community.

“The fact that it is youth-led shows the community if they can do it, we can do it,” she said.

Another goal the partners want to reach is creating new markets for locally grown food. As Wayne Food Initiative was getting started, one partner was already taking the steps to create a farmers market that would provide a place for farmers to sell goods and give consumers another option for buying fresh produce.

Starting a Market

When Karen Padgett moved to Goldsboro, she was surprised that there was no farmers market, especially since Wayne County is ranked third in the state for agricultural sales.

In 2005, the town closed its farmers market because the structure was unsafe, leaving no central place to buy produce from local farmers other than roadside stands, Padgett said.

Padgett, a health promotion coordinator for Wayne County Health Department, was considering ways to get local food to her community when she read an article about

starting a temporary farmers market. She decided the model might work for Wayne County.

Padgett got permission to use space in the Health Department's parking lot near downtown Goldsboro for a small, mobile mini-market, and she began contacting farmers to ask if they would sell produce there.

"I stopped at roadside stands to get people interested," Padgett said. "I looked online for a list of farmers and got contact information."

Padgett planned to open the farmers market in September of 2008, but, with the encouragement of Thraves and Wayne Food Initiative partners, she moved the date up to July 16.

"I didn't know if people would come or if farmers would come back," Padgett said. "We had about six vendors, which is small, but I don't think I would want more than eight because of the small space."

When she was planning the market, Padgett thought it would occur monthly, but with the success of the first market, the farmers agreed to come weekly, each Wednesday from July through November.

"The day the market opened, I couldn't have predicted how it would go, so I did the best I could with the money we had to advertise it," Padgett said. "It was a gorgeous day. There was all this beautiful food, and moms with strollers are rolling in and there are all these county employees and people walking out with bags of stuff."

Only local goods produced in Wayne County were permitted at the market last year. Participating farmers sold vegetables, fruit, baked goods and hot sauce.

Padgett said that the market has been good for the farmers' business and has helped them connect with each other, with Wayne Food Initiative partners and CEFS. One farmer, who grows organic produce, had always wanted to own a bakery. He found encouragement after he sold out of organic blueberry pies at the farmers market.

Padgett said the market customers have been happy to support local farmers.

"People feel proud to buy something that is fresh and beautiful from their community," Padgett said. "They feel like they are doing right because they can afford it and because it's good for their family, and they become friends with the growers."

Padgett says the health advantages of buying local foods are a benefit of the farmers market.

"Getting produce straight from the farm allows a greater proportion of nutrients than produce that has been shipped far distances," Padgett said.

She adds that there are fewer unhealthy options at a farmers market than there are at most grocery stores, and she sees the market as a way to improve the health of her community.

Padgett plans to open the market in April this year and hopes to add more farmers, including some from outside of Wayne County. She says she would like to introduce different products, such as honey from a local beekeeper and herbs.

In addition to the mini market, the partners plan to launch the collaborative "veggie bus" project this spring.

The idea for the bus came together during a Wayne Food Initiative meeting when a partner who works for Wayne Community College asked if the school bus parked outside of Dillard Academy was being used for anything, Baptiste said.

The school donated the bus to Wayne Food Initiative, and students at Wayne Community College are going to repair the bus and add shelves and refrigeration so the vehicle is produce-ready. CASTLES students will sell their produce from the bus a few days a week in low-income neighborhoods in town, and they will open it up to local farmers and partner gardens on other days. The library peace garden plans to donate produce that can be given away. Other Wayne Food Initiative partners would like to see the bus bring fresh, local food to special populations, like nursing homes.

The veggie bus will help partners address food justice in pockets of the county that may not have regular access to fresh, locally grown food, and it will give farmers and gardening programs another outlet for selling crops.

Beyond Wayne County: Building a Local Food System for North Carolina

Wayne Food Initiative is part of a larger movement to build a sustainable, local food economy across the state.

The Farm to Fork movement, also organized by Creamer and her colleagues at CEFS, has brought together people involved with local food and sustainable agriculture programs, like the partners in Wayne County, who may not have been aware of similar efforts in other parts of the state.

Those active in Farm to Fork want to change the way people, from consumers to state legislators, think about food and increase consumer support for local farmers. Creamer said that people have joined Farm to Fork for different reasons. Some want to address issues in health and nutrition, others are interested in protecting natural resources, or making farming economically viable or giving more people access to fresh food – many of the same issues that are important to Wayne Food Initiative.

“For me, if we are raising food here in North Carolina, we can consume it here and we should,” Creamer said. “We need to think about how we raise food, the methods of production and their impact on the environment and people.”

Creamer says it is important to consider the global effect of the food system.

“The global system we have now is making less sense as fossil fuel peaks,” she said. “It makes sense to produce our own food. We shouldn’t be importing sweet potatoes from California when we grow them here. The money circulates around the state instead of going somewhere else.”

In order to achieve their goals, Farm to Fork supporters need to see the big picture, says Creamer.

“You can’t say we want local food in our schools and not realize that the farmers aren’t growing the right things or there are no kitchens in our schools,” Creamer said. “Having a connection with the larger effort in the state is a way to understand those hurdles.”

A Farm to Fork Summit, where partners would come together in Raleigh to learn about each others’ work and brainstorm their next steps, was planned for March 2, 2009, but was canceled due to bad weather. Instead, organizers have rescheduled the summit for mid-May.

The Wayne Food Initiative partners hope to be a model that shows groups across the state what can be achieved at a local level with a little collaboration and organization, Thraves said.

Like efforts in Wayne County, the Farm to Fork movement will take collaboration and hard work to achieve its goals.

“The food movement has been grassroots since it started,” Thraves said. “There just hasn’t been one voice leading it. It’s small pockets everywhere, because people need food every day.”

CHAPTER 4

REFLECTIONS AND CONCLUSION

The term sustainable agriculture means much more than the way food is grown. Producing food using methods that are mindful of the environment is an important aspect of sustainable agriculture. But to many people, sustainable agriculture is also part of a movement to solve problems with the way food is produced, consumed and thought about in communities across the United States.

Every person I talked to while working on this project had a different reason for being involved with the food movement. There were people who were concerned with public health issues. They worried about increased cases of obesity or were concerned with preventing diseases linked to obesity like heart disease or types of cancer. There were people who wanted to protect the environment; people who wanted to make sure farmers and farm laborers in North Carolina can earn a living wage in a healthy environment; and people who wanted to make fresh, nutritious food more accessible to low-income populations in the state, and to address hunger by teaching people to grow their own food. There were groups working to involve youth in sustainable agriculture programs and become advocates for changing the way people eat or even grow up to be farmers, replacing an important but declining profession. And there were individuals who were involved because they love the way they feel when they work outside.

I learned that although people across North Carolina were involved with sustainable agriculture initiatives for different reasons, they were also all involved because food is an important part of human life. I heard over and over again the idea that food brings everyone to the table. It is true, food is our common ground, something all people need no matter who they are or where they come from. Many of the people I met shared the belief that access to affordable, fresh, healthy, locally grown food should be a natural right, and that belief motivated their work to make changes in the way people think about food in order to build enough support to influence decision-makers across the state.

This project did not come together without challenges. Farmers are very busy people during growing seasons, so I spent many hours in the fall conducting interviews out in the field while Cathy Jones harvested or weeded her vegetable and flower beds. It was never very hard to track down Jones, and she was always willing to chat with me as long as she was getting her work done. Writing the remaining articles during the winter was not ideal because few crops grow in cold weather, so there was not much to see when I visited community and other gardening programs. By the time March came along, groups had started early plantings of crops like lettuce and onions, vegetables that are hearty enough to withstand cooler temperatures or an early, spring frost. I missed out on seeing the mini mobile farmers market in action in Wayne County because it will not open until late April, and I missed observing work days in the CASTLES garden and the peace garden at Wayne County Public Library because the weather was too cool and wet for transplanting crops.

Farmers and gardeners also save the winter months as their time to get away from the land they work on for most of the year. There were a number of sustainable agriculture conferences and events in January and February that sometimes made scheduling interviews a challenge. In short, just as timing is critical to farms, so it is with interviewing farmers. If I could do this project again, I would try to visit farms and garden programs during the growing season, and I would schedule interviews far in advance to better work around my sources' other time commitments.

There also was an unexpected snow in early March that forced organizers of the Farm to Fork summit to reschedule for mid-May. I had hoped that Farm to Fork would play a bigger role in the article on Wayne Food Initiative, but when the summit was canceled, I had to rethink how that article might come together and still show that Wayne Food Initiative is a model for the larger food movement across the state.

During the times that I did spend on the farm or at a community garden, the work that I observed and sometimes participated in made me want to get my hands into the soil. Not having a garden of my own, I found myself thinking about the yards of my friends and parents and doodling dream garden plans for them. I wondered if my landlord would notice a few extra plants here and there. I resolved to join a community garden or find a volunteer opportunity on a farm that would put me outside and give me a chance to do some of the things I have written about.

This project also made me more aware of what goes into the food I eat. Though I already knew about the differences between organic and conventional production of meat and produce, I found myself looking for local, organic sources. I wanted to support as many local farmers as possible, and, when I could, I tried not to buy foods that I knew

were shipped far distances or had undergone a lot of processing. Unfortunately, this is not the easiest task, especially during the winter months when stands at the farmers market have fewer offerings, nor is it the least expensive way to shop.

One thing that struck me while I was working on this project was the simple beauty of a working farm or garden. I spent several peaceful evenings out in the field at Perry-winkle Farm relishing the sweet smell of flowers carried by a light breeze and only being able to see miles of rolling green, from the vegetable beds in front of me to the trees and hills in the distance. It was enough to make me wonder how anyone could resist life on a farm. And then there were cheery community, school and library gardens where the beauty of the vegetable beds competed with funky, handmade art projects to instantly make visitors feel welcome.

Most of all, I was inspired by the efforts that communities of people are making to address local problems. There is something very hopeful about a diverse group of strangers working together to improve the quality of life in their community. The problems Wayne Food Initiative and the Urban Ministry Center have chosen to address do not have easy solutions. They will take time, patience and persistence. I hope that their stories inspire other groups to take action.

There are still many stories to report on sustainable agriculture. Many of the programs mentioned in this project are young, so it would be interesting to see how successful they are in changing the food landscape in their communities. The Wayne Food Initiative emerging youth program that started this spring might be a great example of how youth are becoming engaged with sustainable agriculture and local food. It might also be interesting to see if kids involved with programs like the CASTLES garden or the

emerging youth program continue to be involved with community agriculture as adults. Farm to Fork is another initiative that would be important to cover. Farm to Fork's goal is to build a sustainable, local food economy, and to do that they will need support from state legislators and other decision makers. If the Farm to Fork efforts are successful, North Carolina could become a leader in the national food movement.

The idea of food justice is one that also should attract more coverage. In the past, coverage of the food movement has focused on what people should do – buy organic, buy local – without addressing related issues like whether organic food is affordable and available to everyone, or whether farmers are able to earn enough to support the farm. More should be written about food justice, the ability of low-income communities to afford fresh, healthy food and the need for farmers to earn a living wage.

It would also be interesting to write a series about the ways that different farmers in North Carolina are trying to use more sustainable growing methods. The articles could examine the challenges farmers face while transitioning from conventional growing methods to more sustainable growing methods and the effects that transition has on farmers' business plan. These articles could serve as a model for farmers who would like to change the way they tend to their land.

Overall, I am very hopeful about sustainable agriculture movement in North Carolina and across the nation. As I finished writing my last article, the Obamas broke ground for an organic vegetable garden at the White House, the first such garden since Eleanor Roosevelt was in residence. It seems like there are news stories every day about school gardening programs, food movement rallies or new health benefits of eating

organic food. If nothing else, people are becoming more aware of what goes into the food they eat, and with that awareness can decide what changes they are willing to make.

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