

NORTH CAROLINA

COOPERATIVE EXTENSION

AREERA PLAN OF WORK

(Update)

Agricultural Research, Extension and Education Reform Act of 1998

1999-2004, 2005-2006

North Carolina Cooperative Extension
North Carolina State University and North Carolina A & T State
University

***NORTH CAROLINA COOPERATIVE EXTENSION AREERA
PLAN OF WORK AND 2005-2006 UPDATE***

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INTRODUCTION

To achieve their shared land-grant missions, the College of Agriculture and Life Sciences at NC State University and the School of Agriculture at North Carolina A&T State University work collaboratively to provide educational opportunities that are relevant and responsive to the needs of individuals, communities, counties and the state. At the heart of their partnership is North Carolina Cooperative Extension.

Cooperative Extension's mission is to help people put research-based knowledge to work for economic prosperity, environmental stewardship and an improved quality of life. To address ever-changing needs, the organization operates under a dynamic long-range plan -- one that changes as circumstances indicate it should. The plan encompasses 50 major program objectives that focus on five major areas of concern statewide:

- enhancing agricultural, forestry, and food systems
- developing responsible youth
- strengthening and sustaining families
- conserving and improving the environment and natural resources

- building quality communities

To achieve the plan's objectives, specialists at the state's two land-grant universities work hand-in-hand with field faculty stationed in all 100 counties and on the Cherokee Reservation. These Extension professionals' work is coordinated with the efforts of the North Carolina Agricultural Research Service, the research arm of the College of Agriculture and Life Sciences. In fact, over 100 of the nearly 250 Extension faculty within the college have joint appointments with the Research Service.

In addition to this alliance with research faculty, Extension benefits from the input of a well-established statewide system of lay advisers representing the state's diverse population. Also, each county routinely conducts an environmental scan to determine emerging needs and appropriate education responses. These scans give residents, advisers, commodity group representatives, volunteers and other clients the opportunity to ensure that local programs meet local needs and priorities.

In addition, to ensure that underserved and underrepresented audiences are among those included in program development and implementation, Cooperative Extension has developed and maintains a new civil rights plan that includes computer monitoring of program participation by gender and race. A permanent Diversity Task Force monitors programs, suggests policy, develops and conducts training for the organization.

Stakeholder input undergirds all of Extension's efforts. This has undergirded the development of the initial five-year AREERA Plan of Work as well as this two year revised AREERA plan. This plan is summarized by goals below. It represents an important component in Cooperative Extension's efforts to provide educational opportunities to help North Carolina's people address critical challenges facing them today and in the future.

GOAL 1

AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY

Farm regulations are changing, markets are becoming increasingly global in nature, expectations for environmental and natural-resource conservation are higher, consumer preferences are evolving, and new genetically engineered crops are emerging. All of these factors are forcing farmers and agribusinesses to make radical changes. Such changes call for equally revolutionary educational responses from Cooperative Extension.

In North Carolina, where agriculture and agribusiness remains the number one industry, it is especially critical that Cooperative Extension develop and deliver educational programs that help ensure a productive agricultural sector that is competitive in the global economy and that can continue to contribute positively to the state's economy and the quality of life of its citizens.

Over the next five years, plus the two additional years, Cooperative Extension will provide educational programs for farmers representing the diversity of agricultural production in North Carolina, agribusinesses, and the non-farm public. These performance goals are designed to encompass:

- * crops for traditional as well as niche or specialty markets
- * economically and environmentally sound production technology
- * business management and marketing

GOAL 2

A SAFE AND SECURE FOOD AND FIBER SYSTEM

Each year, thousands of Americans die from illnesses caused by food-borne pathogens, and millions more become sick. To reduce health risks, people need access to a safe and secure food supply. The issues associated with food safety and security are broad and complex, making targeted educational programming to food producers, processors, handlers and consumers critical. People also expect a fiber supply for paper and wood products that is affordable and processed in a safe and environmentally sustainable manner.

To reach its goal of helping to ensure a safe and secure food and fiber system, Cooperative Extension will provide programs on these topics:

- * pesticide certification and licensing
- * food quality and safety assurance related to animal agriculture
- * biotechnology in the food supply
- * adopting appropriate technologies, hiring and training qualified personnel and developing in-house quality and safety systems in food processing operations
- * forest products manufacturing and the use and maintenance of wood products
- * basic food sanitation and related issues for food service workers and consumers
- * water regulations and other water-quality issues

GOAL 3

A HEALTHY, WELL-NOURISHED POPULATION

Public interest and concern about nutrition and health issues are at an all-time high. While more consumers than ever are aware of the major issues related to eating and living well, fewer people can actually put the concepts into practice.

Through educational programming, Cooperative Extension will:

- * inform people about proper nutrition
- * help them reduce their risk of chronic diseases
- * inform parents and child-care providers about the proper feeding of infants and children
- * help people with limited resources improve their diets

GOAL 4

AN AGRICULTURAL SYSTEM WHICH PROTECTS NATURAL RESOURCES AND THE ENVIRONMENT

Production of livestock, poultry and agronomic, horticultural and forestry crops is economically important to the people of North Carolina, providing for nearly 22 percent of the gross state

product. To ensure the long-term sustainability of this important industry, farmers, agribusinesses and government service agencies need new technologies and educational programs to help them make wise decisions to protect natural resources and the environment.

Goals include:

- * helping crop and livestock producers and other agribusiness professionals adopt economically and environmentally sound practices to protect water and soil quality and manage wastes
- * helping producers and agribusiness professionals understand, plan and comply with environmental regulations
- * helping people not directly involved in agriculture understand and appreciate the complex relationships between agriculture, silviculture and the environment

GOAL 5 ENHANCED ECONOMIC OPPORTUNITY AND QUALITY OF LIFE FOR AMERICANS

In North Carolina, several economic and social issues have emerged to challenge youths, families and communities. To help address these challenges, Cooperative Extension will design, deliver and evaluate educational programs designed to:

- * improve the quality and availability of child care in North Carolina
- * assist community leaders who seek to implement policies promoting sustainable economic development
- * provide guidance for entrepreneurs designing and maintaining businesses
- * help consumers and families understand the principles of sound money management
- * increase parents' skills and awareness of support services
- * help youth, families and communities become more resilient by building skills and collaborating in both intervention and prevention programs
- * provide long-term support systems for youth

AREERA PLAN OF WORK UPDATE North Carolina Cooperative Extension North Carolina State University and North Carolina A & T State University-- 1999-2004, 2005-2006

PLAN FOR STAKEHOLDER INPUT

An ongoing system of securing stakeholder input in program planning, implementation, and quality assessment has and continues to be a primary commitment for North Carolina Cooperative Extension. An Advisory Leadership System is functional in each of the 100 counties in North Carolina. The system includes an Advisory Council and many specialized committees. The Advisory Council represents geographic, cultural and economic diversity within communities of the county. Its function is to provide overall programmatic review, conduct environmental scans and needs assessment for program direction, and help market extension.

The specialized committees provide specific program input for individual commodities, issues and ongoing program needs for traditional and underserved audiences. Membership on both the council and the specialized committees represents the diversity of the respective county population to include under-served populations. While the advisory council will meet quarterly, the specialized committees will meet at least annually to discuss accomplishments and needs still to be addressed. This system is monitored administratively to assure that stakeholders provide such program input and actions.

At the state level, a Statewide Advisory Council provides programmatic inputs, review and guidance for the overall program functions of the North Carolina Cooperative Extension Service at N.C. State University. This group meets quarterly as well as for other special meetings to meet organizational review and input needs. This Council is made up of influential individuals who represent a broad scope of the diverse population in North Carolina and who have distinguished themselves as respected and responsible knowledgeable leaders who can provide local perspectives into a statewide organization. In addition to being an integral part of the overall State Advisory Council, the Extension Program at NC A&T SU is also guided by a cadre of citizens who make up the Strategic Planning Council. The Strategic Planning Council includes community leaders, agribusiness persons, representatives from non-governmental organizations, representatives from State Advisory Council, representatives from county based specialized committees and elected officials.

The Strategic Planning Council meets three times a year as a group. Networking and collaboration between the State Advisory Council and the Strategic Planning Council is facilitated by two members who serve on both Councils. Members of each Council periodically meet jointly. With these organized groups functioning as a planned emphasis on significant stakeholder input into program direction, a planned and proactive process is operational that assures that programs are reviewed and overall needs assessed on a continuous basis, but no less than once every two years, with greater frequency encouraged. However, with the functioning of the respective advisory groups on a much more frequent basis, stakeholder inputs are producing a continuous process of program review and adjustments as local needs change.

As in the original plan, an environmental scan will be implemented in each of the state's 101 county administrative units to assure that sufficient and inclusive stakeholders provide the scope of representation needed for effective program priority-setting. This environmental scan surveys county residents, the total advisory system, commodity groups, local government officials, city and county managers, corporate groups, other clientele, and volunteers. Altogether, more than 25,000 of the state's citizens will be instrumental in the identification and assessment of needs, issues, and problems that the NC Cooperative Extension System's major problems can address. In addition to the Extension staff and members of the advisory leadership systems, more than 20,000 Extension clientele and individuals who have not participated in Extension programs will be surveyed for input into the scan process. Local Extension staffs have identified more than 1200 groups that will also provide additional information to supplement the biennial statewide environmental scan.

POW MERIT REVIEW PROCESS

Special program development and review committees have been established during 2003 to lead the program development and implementation of the 50 plan of work objectives in the current

state plan which was released in 2003. These committees are representative of all program areas, with members representing all facets of Extension personnel from NCSU and A&TSU. The state program leaders who also serve from these two institutions serve as reviewers as well as to guide the entire program development process. The other merit review group is the POW goal chairs. Collectively, these individuals provide a significant internal merit review of programs taking into consideration the needs and expectations expressed in the stakeholder input process.

REACHING UNDER-SERVED and UNDER-REPRESENTED AUDIENCES

North Carolina Cooperative Extension has an established process to assure that such audiences are included in the program development and implementation process. A civil rights plan requires that each county unit report its advisory system membership and the racial and gender makeup of these audiences. Additionally, each organized group that each extension county unit has as a part of its program must pass an inclusionary test to assure that all possible efforts are made to be inclusive of under-served and under-represented individuals and groups in each county. A computer reporting system immediately notifies each unit if a group is not in compliance. If not, an explanation of proactive inclusionary efforts to be undertaken must be written and reported for each group.

Extension programs emanating from both A&T State University and NC State University are implemented through integrated programs in each of the state's counties. These programs are developed to reach a broad audience base, and continuous efforts are made to plan and implement programs to include new and hard-to-reach audiences. These efforts are promoted throughout the system, and personnel evaluations include the resourcefulness and responsiveness of personnel to assuring that under-served audiences are recruited for program participation and that such groups and individuals are proactively sought out to assure greater representation. Such efforts are an integral part of the Extension system in North Carolina, and such efforts shall continue to be made in an unrelenting fashion to assure that an expanding audience base includes under-served persons.

INTEGRATED RESEARCH AND EXTENSION ACTIVITIES

Research and extension activities are integrated within the College of Agriculture and Life Sciences (CALs) at the administrative, programmatic, departmental and faculty levels. The Directors of the NC Agricultural Research Service (NCARS) and the NC Cooperative Extension Service (NCCES) work closely together and coordinate all aspects of administration; including position management, state budget requests, budget allocation, facility management, and space utilization. Currently there is an integrated effort to more closely align administrative structure of the Directors' offices with programmatic areas across research and extension in the college.

Programmatically, research and extension activities are integrated formally in a number of key areas through the efforts of faculty serving in the role of Research and Extension Coordinator or as a Center Director. Examples of programmatic areas where this has been particularly successful are water quality, animal waste management, integrated pest management, sustainable agriculture, air quality, small fruits, and specialty crops. These Coordinator and Center Director positions are funded by both NCARS and NCCES and operating funds are allocated from both offices.

In all CALS departments that have both research and extension faculty, these faculty are housed together and interact on a day-to-day basis in all operational and programmatic aspects of the department. This also promotes close interaction with faculty who teach, most of which have research or extension appointments.

The most complete integration of research and extension occurs at the individual faculty level. More than 100 of the 350 CALS faculty at NCSU with research appointments also have extension appointments. In fact most of these split-appointment faculty have 50 to 80% extension appointments, so their research programs are specifically designed to support their extension programs. These faculty serve as a strong link between those faculty who have a majority research appointment (usually split with teaching) and the county-based extension field faculty and state's agricultural industries. Working closely with the more basic, discovery-oriented research faculty, these research/extension faculty, in conjunction with county field faculty, bring new knowledge and technology to the producers and agribusiness through development, field testing and demonstration.

With nearly \$11 million received from Smith-Lever Section 3 b and c funds, the commitment to an integrated research/extension programmatic approach far exceeds 25% of the federal appropriation when state and other sources of funds are committed to the more than 60 integrated projects and their support.

However, in order to account specifically for those documentable expenditures of Smith-Lever section b and c funds, there were initially 27 persons with extension-research appointments who received salary support from these federal formula funds. This expenditure for 2000 amounted to 6.7 % of the federal b and c allocation for 1997, amounting to \$747,785. This amount was to be increased to reach a goal of 14 %, or \$1.575 million by following the Option D of the guidelines allowing a phase in period. This phase in period has been successful in, in that the 14% goal was exceeded to reach more than 18% by the end of the 2003 year, reaching \$2,052,016. Plans are to continue to progress toward increasing levels of integrated funding in future years. Due to changed accounting systems and personnel since 1996-97 and the resulting difficulty in accurately accounting for integrated extension and research activities, we were unable to establish a 1997 percentage baseline. The integrated research and extension project listing for 2001 is provided in this document. More current project listings are reported each year in the Plan of Work Updates and Annual Reports.

MULTISTATE ACTIVITIES

NCCES has identified a large number of multistate activities in which our faculty engage in program development and implementation. The large majority of such activities have been and are being conducted through mutual cooperation and support of the Universities and faculties involved. Such collaborative and cooperative agreements have functioned primarily on a non-formal commitment of the personnel involved or through respective commodity and professional associations. Most agreements have been of a verbal, non-written, non-formal means for getting the jobs and projects accomplished. However, based on the guidelines in accounting strictly for federal Smith-Lever section b and c funds, we have only been able to identify two projects that meet the guidelines for 1997. These expenditures amounted to \$12,473, or .0112 % of the 1997 appropriation. Option C of the guidelines has been chosen to demonstrate our commitment to progressing toward increasing the documentable use of Smith-Lever section b and c funds to

focus on multistate program efforts. The identified multistate programs in which NCCES plans to meet its commitments through 2004 is provided as a part of this document.

AREERA PLAN OF WORK
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GOAL 1

AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY

Statement of Issues

North Carolina is a major producer of agricultural products and ranked seventh in the nation in the value of farm production. Agriculture is North Carolina's number one industry and generated farm products worth \$9.1 billion a year, on average, over the 2000-2002 period. When upstream and downstream economic activity related to agriculture is considered, this sector is responsible for 22 percent of the total gross state product and employs 20 percent of the work force. With an estimated 80 commercial products, the diversity and dynamism of North Carolina's agriculture is amazing. Over the last 25 years, North Carolina agriculture has changed from primarily row crop production to a highly diversified livestock and crop agriculture and is now exploring production of raw materials for pharmaceuticals and other alternatives to traditional farm commodities. The growth of animal agriculture has had an impact on the environment and on rural non-farm residents.

Crop production continues to be an important part of North Carolina agriculture, but North Carolina is a marginal producer of many nationally important crops, which means acreages adjust markedly to changing domestic and global economic conditions, foreign trade agreements, and changes in government programs. It is critical that producers understand the impact of these factors on their particular farm situation.

There are tremendous changes in population demographics in North Carolina. These changes affect the demand for traditional farm products and create demands for new agricultural products. Population growth and urban spread affect both land use and land values. There are new voices in agricultural policy and regulation arenas who are creating new rules for farmers to live by. There are changes in the structure of the nation's agriculture and a bimodal distribution has emerged. On the one hand, we see large farms and agribusiness concerns, high capital investment and vertical integration. On the other, we have a much larger number of individuals engaged in smaller-scale, part-time farming. People in this part of the spectrum often produce for niche, local and specialty markets.

As a result of these changes, there are an expanding number of new or inexperienced producers, which creates increased education needs and opportunities for production and marketing information. Also, as producers diversify into horticultural and specialty crops, they must understand non-traditional markets and develop marketing strategies. Programs are needed to

educate lenders and the financial community about these opportunities and to help farmers and entrepreneurs develop strong business plans.

In summary, the likely reductions in some economically important commodities and expansion in other products, changes in government policies and regulations, expanding global markets, changes in farm structure, the introduction of genetically engineered crops, and changes in demographics are challenges facing all segments of North Carolina's agricultural community. NCCES must be prepared to continue to develop and deliver educational programs to full-time, part-time and limited-resource farmers, to agribusiness, and to the non-farm public to ensure a productive agriculture that is competitive in the global economy and that can continue to contribute to the state's economy and the way of life of its citizens.

Performance Goals

Producers and their families will select, adopt and successfully implement enterprises and practices that will achieve individual and family goals related to profitability and quality of life. To this end, producers will investigate and evaluate alternative agricultural opportunities, innovative production practices and marketing options. Part-time and limited-resource farmers will increase the viability of their farms through diversification, intensive management practices and expanded markets. Producers, farm organizations, and agribusinesses will become knowledgeable of local and global market factors and develop strategies to cope with or take advantage of these factors to maximize farm profits.

These performance goals encompass the following North Carolina Cooperative Extension Long Range Plan Objectives under the Enhancing Agriculture, Forest and Food Systems Program Area:

Objective A-1: Animal, poultry and aquaculture producers including limited resource audiences will implement practices or enterprises that will achieve individual and family goals related to profitability and quality of life;

Objective A-4: Field crop growers will implement recommended and potential production practices and systems, investigate innovative agricultural opportunities, develop business and human resource plans, and explore marketing options to ensure continued farm productivity and profits and quality of life;

Objective A-5: Commercial horticulture growers will implement recommended and potential production practices and systems, investigate innovative agricultural opportunities, develop business and human resource plans, and explore marketing options to ensure continued farm productivity and profits and quality of life;

Objective A-7: Part-time, limited resource and other farmers will increase the quality of life and the sustainability of their farms through crop diversification, integration of appropriate alternative opportunities and enterprises, intensive management practices, water and nutrient management, business management, and expanded markets;

Objective A-11: Food processors who participate in Extension programs will adopt new technology, hire and train qualified personnel, and develop in house quality systems to ensure regulatory compliance along with sustained growth and profitability;

Output Indicators

The main output indicator will be the number of producers adopting new or improved marketing and production practices, including best management practices (BMPs), that are profitable either because of added income, reduced costs, or both. A second measure will be the number of acres affected by selected BMPs. Every parameter measured will provide data on both non-limited resource audiences and limited resource audiences.

A1. Adoption of best management practices that optimize income including recommended nutrition, breeding, marketing, buildings & facilities, health and general management practices, and improved farm financial planning practices and procedures.

A4. Number of row crop producers adopting, and number of acres affected by: New marketing/risk management strategies; New or alternative production systems/enterprises; New or alternative production practices; Improved field selection; Improved pest management strategies (weeds, insects, diseases); Improved varieties; Improved harvesting techniques; Equipment adaptation; Business plans developed; Improved labor management/efficiency; Optimum tillage systems; Optimum fertility management; Crop rotations.

A5. Number of fruit & vegetable growers implementing, and number of acres affected by: New marketing/risk management strategies; new or alternative production systems/enterprises; new or alternative production practices; improved field selection; improved disease management; improved insect pest management strategies; improved weed management strategies; improved varieties; improved harvesting techniques; equipment adaptation; business plans developed; improved labor management/efficiency; optimum tillage systems, optimum fertility management; crop rotations

A7. Part-time, limited resource and other farmers adopting best management practices, including installed/improved irrigation systems; improved nutrient management; improved marketing practices; presence in multiple markets; producing new or alternative crops/enterprises; implemented new crop production practices; enhanced sustainability practices; implementation of farming systems; business plans developed.

A-11: 1. Food processing personnel certified in food processing, handling and/or safety;

2. Number of food processors adopting quality control strategies; and

3. Number of food processors adopting new technology.

Outcome Indicators

The following outcome indicators will be evaluated:

A1. Net income gains by livestock producers through the adoption of recommended nutrition, breeding, marketing, buildings & facilities, health and general management practices, and improved farm financial planning practices and procedures.

A4. Increased net income for row crop producers from implementing: New marketing/risk management strategies; New or alternative production systems/enterprises; New or alternative production practices; Improved field selection; Improved pest management strategies; Improved varieties; Improved harvesting techniques; Equipment adaptation; Improved labor management/efficiency; Optimum tillage systems; Optimum fertility management; Crop rotations.

A5. Increased net income for fruit and vegetable growers from implementing: New marketing and risk management strategies; New or alternative production systems or enterprises; New or alternative production practices; Improved field selection; Improved disease management; Improved insect pest management strategies; Improved weed management strategies; Improved varieties; Improved harvesting techniques; Equipment adaptation; Business plans developed;

Improved labor management/efficiency; Optimum tillage systems; Optimum fertility management; Crop rotations.

A7. Increased net income for part-time, limited resource and other farmers due to implementing : Installed/improved irrigation systems; Improved nutrient management; Implemented improved marketing practices; Presence in multiple markets; Producing new or alternative crops/enterprises; New/improved crop production practices; Enhanced sustainability practices; Implementation of farming systems; Optimum business decisions.

A-11: 1. Number of jobs increase in food industry employment; 2. Increased dollar value in construction and purchase of food processing equipment; 3. Number of new food processing companies in the state

Key Program Components

North Carolina's agriculture is diverse. In some situations there are problems and opportunities associated with growth, in others the challenge is to restore or maintain profitability. Demand for educational programs is increasing not only in traditional programming areas but also for multidisciplinary, issue-driven problems. Federal and state agencies are pushing for higher adoption of more environmentally sound production practices and are creating more regulations that producers must meet. Extension programming is responding to these changes.

Subject matter includes production technology based in many disciplines as well as the business management skills and tools needed to evaluate alternatives. There are three components: 1) Production and marketing opportunities based on family resources, talents and location; 2) identification of alternatives, analysis, selection, and planning production and marketing; 3) the effective implementation of the production and marketing plan. However, this approach must, and will, give agents and specialists the flexibility to address the many and varied areas of concern based on specific needs and circumstances of clientele.

Internal and External Linkages

Existing internal and external partnerships will be continued and strengthened as appropriate to meet this goal. Internal linkages occur primarily through a well-developed, goal-oriented extension planning system. This system is interdisciplinary and involves personnel from 1890 and 1862 institutions. External linkages are both formal and informal. Formal linkages include participation in Southern Extension and Research Activity--Information Exchange Groups (SERA-IEG), of which there are 16 currently existing that will be functioning during the period covered by this plan. Informal linkages arise through personal relationships developed through contacts made at commodity and specialized meetings, professional associations, regional conferences, and the like.

Target Audiences

Because of the importance, complexity and dynamism of North Carolina agriculture, there are many clientele groups to be served. All those involved with, and affected by, production agriculture are our clientele, including farmers and their families, the agribusiness community that supplies the farm inputs and processes the farm products, consumers, youth, rural non-farm residents, and those in leadership roles. Producers span the gamut from the smallest-scale, limited-resource farmer to the largest commercial operations, and from the new entrant with little

basic knowledge to the most experienced and sophisticated operator. This audience also encompasses the independent farmer and those who are contract producers for large, integrated firms.

Program Duration: 5 plus 2 Years

FTEs & PROGRAM COST

State FTEs - 47.5	County - 64	Program cost- \$7,125,619
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NCCES FTEs -State 45	County - 60	Program cost- \$6,750,717
NC A & T FTEs - State 2.5	County - 4	Program cost- \$374,902

GOAL 2

A SAFE AND SECURE FOOD AND FIBER SYSTEM

Issue(s): The safety and security of our food and fiber supply are shared responsibilities. Food producers, processors, handlers, and consumers are all part of the food safety and security continuum from farm-to-table. Consumers want a safe food supply and access to nutritionally adequate and affordable foods. Consumers also want an adequate and affordable fiber supply to provide paper, packaging and other wood product needs.

The 1994 report from the Council on Agriculture Science and Technology estimated that 6.5 to 33 million cases of human illness and 6,000 to 9,000 deaths occur annually in the U.S. due to food borne disease. These statistics are astounding and provide clear justification to the allocation of land-grant resources (teaching, research, extension) to minimize food safety hazards (biological, chemical, and physical) associated with the morbidity and mortality.

Reduction in the incidence of foodborne disease is a feasible goal. However, realization of this goal will require collaboration among all elements of the farm-to-table continuum, including research and education initiatives. The food safety system is in need of change, especially change that builds on the preventive principles embodied in HACCP (Hazard Analysis Critical Control Point) programs. NCSU and NC A&T research efforts focus on innovations throughout the farm-to-table continuum to prevent biological, chemical, and physical hazards from contaminating foods. Additionally, extension education programs address food safety in a number of ways including aiding in the development and implementation of HACCP plans and Good Production and Manufacturing Practices. Extension programs have also targeted food handlers (i.e., consumers and foodservice workers) to teach them safe food-handling principles.

Food security is also an important health issue. Food security focuses on concerns related to access to nutritionally adequate and safe foods. Poor nutrition and its relationship to many chronic diseases is well documented, as is the association of unsafe foods with food borne illness. Both conditions cost the U.S. billions of dollars and impair the quality of life for many Americans. Food insecurity is strongly associated with poverty. NC ranks thirty eighth among states in terms of poverty. More than 12% of the state's population of 6.9 million lives in poverty. In 25 of the 100 counties, more than 20% of the residents live in poverty; in 21 counties 15% live in poverty. Of these 46 counties, 39 are rural. Food recovery is one way to

enhance food security. Up to 20% of America's food goes to waste each year, with an estimated 130 pounds per person ending up in landfills. Within the state, six Second Harvest Food Banks and six prepared and perishable food recovery programs have been operating since 1981.

Food safety and security issues are not isolated to any one scientific discipline or business sector. Consequently, improvements to the safety and security of our food system require multi-disciplinary collaboration between appropriate academic colleges and departments, as well as commitment from all elements of the farm-to-table business sectors. In addition, collaboration with responsible local, state, and federal regulatory agencies is imperative.

Fiber production from agriculture or forest products enterprises are vital parts of North Carolina's economy. Issues associated with these enterprises are safe and efficient processing methods and technologies that minimize environmental and health risks yet provide a quality and affordable product. Efforts are directed at improving the efficiency of wood products manufacturing facilities and operations.

North Carolina is fortunate to have developed strong linkages among these important academic, business, and regulatory groups. The nature of these relationships ranges from funding support to joint participation in research and education programs.

Since the issues associated with food safety and security are broad and complex, so too are the audiences addressed by the North Carolina program. The audiences most likely to be impacted by our programs are primary producers, food processors, food service operators, and consumers. Efforts will also be directed at reaching out to under-served and under-represented individuals, groups, and organizations by first seeking to identify these individuals or organizations through the county Extension network and developing specialized educational programs to suit their specific needs. The methods used to engage these audiences will include formal teaching, workshops, distance learning, conferences and undergraduate and graduate research. Reporting vehicles include professional journals and trade publications, conference proceedings, books, patents, cooperative extension publications, and joint academic/industry reports.

Performance Goals:

Performance Goal 1: Agriculture and the Environment

All commercial pesticide applicators, public operators, consultants, dealers, and private pesticide applicators will be certified and trained in pesticide best management practices to protect crop safety.

Output Indicators

1. Number of BMPs adopted concerning pesticide use
2. Number of certifications and recertifications

Outcome Indicators

1. Reduction in pounds of pesticides applied per acre of crop
2. Amount of production costs reduced through proper and more efficient use of pesticides

3. Reduction in number of application citations for improper pesticide application or handling practices

Key Program Components

The key teaching components of this objective include the certification and recertification of private applicators, pesticide labeling, record keeping, pesticide disposal, preventing surface and groundwater contamination, commercial licensing, pesticide alternatives, and IPM programs.

Internal and External Linkages

Opportunities to form networks with other agencies, entities, and/or organizations are unlimited. Such opportunities include but are not limited to federal and state agencies, agribusinesses, news media, environmental groups, physicians/veterinarians, political stakeholders, educators at all levels, commodity organizations, and crop growers associations.

Target Audiences

1. Private pesticide applicators
2. Commercial pesticide applicators, consultants and dealers
3. Agricultural workers and pesticide handlers

Program Duration: This program will continue for the five year life of this plan plus two additional years.

Performance Goal 2: Animal Production and Marketing Systems

North Carolina citizens (farm and non-farm) will address controversial issues (of mutual concern) that relate to animal agriculture, including food quality and safety assurance. Resolution of these issues will not only sustain the NC animal agriculture industry but provide for the production of safer food products derived from animals.

Output Indicator

1. Number of newspapers and other mass media stories indicating enlightened information and knowledge about animal agriculture

Outcome Indicators

1. Number of farmers demonstrating increased knowledge of animal agriculture
2. Number of non-farm citizens demonstrating increased knowledge and improved attitudes about animal agriculture
3. Number of farmers demonstrating increased knowledge of food supply facts and quality standards
4. Number of non-farm citizens demonstrating increased knowledge of food supply facts and quality standards
5. Number of farmers adopting appropriate standards, practices, and procedures to address industry concerns and issues

Key Program Components

The key teaching points of this objective include the contributions of animal production to the economy, waste recycling, environmental concerns (odor, pests, wastes, disease, property value degradation), integration of rural and urban culture (experience, needs, expectations, concerns),

and other public policies, issues, and concerns (animal welfare, land stewardship, quality of life, regulation/legislation, biotechnology).

Internal and External Linkages

1. Interagency collaboration on cost share and waste management programs
2. Producer associations
3. National grower's organizations
4. Issue resolution groups that include participants from the animal production sector, county/local governments, environmental groups/agencies, community/business leaders, concerned citizens
5. Commodity group action committees to promote community awareness and respond to issues
6. Funding sources

Target Audiences

1. Agricultural groups, including contract growers, independent animal producers, integrators, other farm operators, processors, farm organizations, commodity groups, 4-H/FFA groups, agricultural lenders, agricultural contractors and suppliers
2. Government and community, including federal and state regulators, county commissioners, city council members, civic organizations, building contractors, realtors, other business owners, homeowner/subdivision organizations, schools, church organizations, general public (rural and urban) media, and environment/health organizations

Program Duration: This program will continue for the five year life of this plan plus two additional years.

Performance Goal 3: Crop Production and Marketing Systems

Citizens will become knowledgeable about biotechnology and the use, benefits, and risks associated with the production of genetically engineered crop plants.

Output Indicators

1. Number of individuals with increasing awareness and knowledge of biotechnology and its application to crop production
2. Number of farmers utilizing biotechnology applications to crop production through the use of genetically engineered varieties
3. Number of acres affected from adopting biotechnology practices
4. Number of citizens with increased knowledge of safety, use, and benefits of production of genetically engineered crop plants

Outcome Indicators

1. Number of dollars in optimized profits through the use of practices associated with production of genetically engineered crop plants
2. Number of dollars saved in pesticide use through genetic resistance to plant pests
3. Number of non-farm public demonstrating knowledge and understanding on the use, benefits, and risks associated with food, food products, and fiber crops generated from

genetic engineering

Key Program Components

The key teaching points of this objective include understanding biotechnology (use, benefits, and risks associated with genetically engineered plants on NC farms), food safety and genetically engineered plants and plant products.

Internal and External Linkages

1. Joint projects
2. Demonstrations
3. Grants Providers
4. Resource materials generated through cooperative efforts with agencies such as FSA, NRCS, NCDA&CS, USDA, commodity organizations, agribusiness, environmental interest groups, and local and state agencies

Target Audiences

1. Farmers
2. Agribusiness
3. County decision makers
4. Civic organizations
5. General public

Program Duration: This program will continue for two additional years past the five year plan.

Performance Goal 4: Food Products Manufacturing

Food processors will adopt new technologies, hire and train qualified personnel, and develop in-house quality systems to ensure regulatory compliance relating to food safety standards along with sustained growth and profitability. New and potential entrepreneurs especially in the food products manufacturing area will benefit from programs in business setup, management, quality, technology and regulations by entry into the marketplace and demonstrating sustained growth and profitability.

Output Indicators

1. Number participating in training
2. Number adopting quality and safety strategies
3. Number of firms adopting new technologies
4. Number of requests for assistance from small business and entrepreneurs
5. Number of county manufacturing/entrepreneurial clubs established
6. Number of new companies in food and forest products manufacturing

Outcome Indicators

1. Increased value of industry in dollars
2. Increase in industry employment in dollars
3. Increase in construction and purchase of food processing equipment in dollars

4. Number of new small businesses in food manufacturing.
5. Number of entrepreneurs who will become established, hire new employees, and will improve probability of success

Key Program Components:

The key teaching points of this objective include Total Quality Management, ISO 9000 programs, food processing technology, residue avoidance, employee safety, food regulations, and management techniques such as TQM, statistical process control, HACCP, managing people, crisis management, and evaluation of new technologies.

Internal and External Linkages

1. Regulatory and public health agencies
2. Suppliers of new equipment and technology
3. Commodity organizations
4. Industry cooperators
5. NC Departments of Labor and Commerce
6. Small Business Technology and Development Centers
7. Small Business Administration
8. Trade associations
9. USDA

Target Audiences

1. Food processors and their employees
2. Supervisors in the food processing industry
3. Regulatory and public health personnel at the state and local levels
4. Entrepreneurs
5. Consumers

Program Duration: This program will continue for the five year life of this plan plus two additional years.

Performance Goal 5: Forest Products Manufacturing

Forest products manufacturers will increase their competitiveness, productivity, profitability, and utilization of innovative technology, and North Carolina citizens will increase their knowledge of wood products, their proper application and maintenance. New and potential entrepreneurs especially in the forest products manufacturing area will benefit from programs in business setup, management, quality, technology and regulations by entry into the marketplace and demonstrating sustained growth and profitability.

Output Indicators

1. Number of firms adopting new manufacturing techniques
2. Number of consumers adopting practices related to selection, use and maintenance of wood products
3. Number of consumers increasing their knowledge of the economic importance of the wood products industry

4. Number of consumers increasing their understanding of forest products and their proper use
5. Number of requests for assistance from small business and entrepreneurs
6. Number of county manufacturing/entrepreneurial clubs established
7. Number of new companies in food and forest products manufacturing

Outcome Indicators

1. Number of dollars saved through improved utilization or productivity
2. Number of dollars from increased production of value-added products
3. Number of dollars saved through improved yield, efficiency, productivity, and marketing
4. Number of new small businesses in forestry manufacturing.
5. Number of entrepreneurs who will become established, hire new employees, and will improve probability of success.

Key Program Components

The key teaching points of this objective include implementation and evaluation of new wood products utilization techniques/technologies, regulations, business management principles, marketing, production efficiency and productivity, product quality, feasibility studies, consumer education, effective decision making and management techniques such as TQM, statistical process control, managing people, and crisis management.

Internal and External Linkages

1. Regulatory and public health agencies
2. Suppliers of new equipment and technology
3. Commodity organizations
4. USDA, Forest Service
5. NC Division of Forest Resources
6. Industry cooperators
7. NC Departments of Labor and Commerce
8. Trade associations

Target Audiences

1. Primary manufacturers
2. Secondary manufacturers
3. Managers in the wood products industry
4. Users of wood products
5. Supervisors in the manufacturing industry
6. Entrepreneurs

Program Duration: This program will continue for the five year life of this plan plus two additional years.

Performance Goal 6: Food Safety and Quality

Participants will adopt behaviors to decrease the risk of foodborne illness.

Output Indicators

1. Number of people attending a food safety program for consumers
2. Number of people attending a home food preservation program
3. Number of people who completed a food safety program for foodservice managers
4. Number of people who completed a food safety program for foodservice workers
5. Number of participants who increased knowledge about safe food handling in the home
6. Number of participants who increased knowledge about safe home food preservation practices
7. Number of participants in a foodservice managers program who successfully passed a nationally recognized certification examination
8. Number of participants in a foodservice workers program who scored a 75% or higher on a safe food handling knowledge test

Outcome Indicators

1. Number of participants who adopt at least one safe food handling practice
2. Number of participants attending a foodservice managers program who improved their operational practices

Key Program Components

The key teaching points of this objective include: basic food sanitation, legal issues, laws and regulations governing food, costs of foodborne illness, procedures for reporting unsafe food handling, and home food preservation.

Internal and External Linkages

1. Biotechnology companies
2. NC Biotechnology Association
3. County agencies/programs
4. Extension homemakers
5. Health Department director, sanitarians
6. JOBS program coordinator
7. Mental health group homes
8. Nursing and group home administrators
9. Senior Meals Program staff
10. Social Services personnel
11. Child care directors, providers
12. Community college staff
13. NC Department of Public Instruction
14. K-12 teachers
15. Media
16. School administrators, food service directors
17. Vocational education coordinators
18. Commodity organizations
19. Food processors and retailers
20. Producer/commodity groups
21. Restaurant Association
22. Restaurant owners
23. Retail food managers
24. Government agencies

25. NC Department of Agriculture and Consumer Services

Target Audiences

1. Food producers and processors
2. Food service - public food service (day care providers, restaurant employees, occasional quantity food servers, institutional food service workers, food retailers, jobs staff and participants, sanitarians, caterers)
3. Consumers
4. Home food preservers

Program Duration: This program will continue for the five year life of this plan plus two additional years.

Performance Goal 7: Biotechnology

Target audiences will increase knowledge of and confidence in the safety and acceptability of the use of biotechnology in our food supply. Due to the continuing changes in food technology other areas not yet known will need to be addressed in the future.

Output Indicators

1. Number of consumers with increased knowledge about the application of biotechnology

Outcome Indicators

1. Number of consumers with improved attitudes about the safety and acceptability of the use of biotechnology in the food supply

Key Program Components

The key teaching points of this objective include: definition of biotechnology, importance of biotechnology, historical context of biotechnology, genetic engineering, public policies and interests, major uses of biotechnology, food related benefits and applications, enhanced knowledge and understanding, economic growth and the state's economy, issues and concerns about biotechnology, and public policies and regulations.

Internal and External Linkages

1. Biotechnology companies
2. NC Biotechnology Association
3. County agencies/programs
4. Extension homemakers
5. Health Department director, sanitarians
6. JOBS program coordinator
7. Mental health group homes
8. Nursing and group home administrators
9. Senior Meals Program staff
10. Social Services personnel
11. Child care directors, providers
12. Community college staff
13. NC Department of Public Instruction

14. K-12 teachers
15. Media
16. School administrators, food service directors
17. Vocational education coordinators
18. Commodity organizations
19. Food processors and retailers
20. Producer/commodity groups
21. Restaurant Association
22. Restaurant owners
23. Retail food managers
24. Government agencies
25. NC Department of Agriculture and Consumer Services

Target Audiences

1. Consumers
2. Public officials
3. Media
4. Educators
5. Food industry

Program Duration: This program will continue for the five year life of this plan, plus two additional years.

Performance Goal 8: Residential and Community Water and Waste Management.

Water Quality: Elected officials, community well owners, environmental health specialists and homeowners will understand water regulations and options for remedial actions and improve or maintain surface and groundwater quality and safety.

Output Indicators

1. Number of people with increased knowledge and awareness of best management practices to protect and improve drinking water quality and safety
2. Number of people who adopted one or more best management practices to protect and improve drinking water quality and safety

Outcome Indicators

1. Costs avoided by not having to replace the contaminated wells or use an alternate water source
2. Number of wells protected or improved by implementing one or more water quality best management practices

Key Program Components

The key teaching points of this objective include water basics, water conservation, water pollution, water quality standards, regulations, water testing, water treatment, and protecting private wells and springs.

Internal and External Linkages

1. Formation of an environmental advisory board comprised of representatives from interests groups, governmental agencies, community groups, and private citizens
2. NC Department of Environment and Natural Resources
3. Local health or environmental departments
4. Public works departments
5. Sources of funding: utility companies, businesses, industries, USDA, EPA, Water Quality Incentive Projects, foundations, or local and state governmental agencies

Target Audiences

1. Private well users
2. Public water supply users
3. Media
4. Youth
5. Realtors
6. Community well owners
7. Developers
8. Local officials
9. State officials
10. Environmental health specialists

Program Duration: This program continued for the five year life of the plan, plus an additional two years.

FTEs & Program Cost for Goal 2

State FTEs - 28	County - 37	Program cost- \$4,185,098
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GOAL 3

A HEALTHY, WELL-NOURISHED POPULATION

Issue

The importance of promoting nutrition and wellness throughout life has been clearly established. Two major scientific reviews, the "Surgeon General's Report on Nutrition and Health" and "Diet and Health" by the National Research Council have documented several diet and chronic disease relationships and have recommended some dietary changes for the public. The Public Health Service "Year 2010 Objectives For the Nation" has also noted the major role that nutrition plays in health promotion and disease prevention. Most recently the US Department of Health and Human Services produced "The Surgeon General's Call To Action to Prevent and Decrease Overweigh and Obesity 2001." This document and many other scientific reviews chronicle the rising epidemic of overweigh and obesity that is plaguing the US. If this trend is not slowed or reversed, it could eliminate the progress we have made in reducing the burden of weight-related chronic diseases such as heart disease, stroke, diabetes and several forms of cancer.

Behaviors for Optimal Health

Public interest and concern about nutrition and health issues are at an all-time high. While more consumers than ever are aware of the major issues, fewer can put those concepts into everyday practice. At the same time consumers are vulnerable to misinformation that targets their concerns and fears. Scams and misinformation abound and are costing the public billions of dollars. Consumers continue to need help in using the Dietary Guidelines and the Food Guide Pyramid to incorporate balance, moderation and variety in their diets. Research has shown that consumers do not know the food groups nor the number of servings they and their families should have from each food group. They also do not understand serving sizes and confuse a "serving" with a "helping" of foods. Programs that address these needs continue to be imperative if consumers are to adopt behaviors that optimize their health.

Nutrition and Chronic Disease

Dietary factors are associated with five of the ten leading causes of death in N.C. (and in the U.S.), including coronary heart disease, some types of cancer, stroke, noninsulin-dependent diabetes mellitus, and atherosclerosis. Another three (cirrhosis of the liver, unintentional injuries, and suicides) are associated with excessive alcohol intake. Currently, health professionals are more concerned with excess and imbalance of certain components in the diet than the dietary deficiencies seen in former days. North Carolina has higher age-adjusted mortality rates in comparison to national averages, much of which may be related to what citizens eat. Diets in North Carolina are improving, but 1993 and 1994 statewide surveys show that people still consume too much fat, salt and sugar and too little high fiber fruits, vegetables and whole grain foods. Many people have heard and accepted the message that they should reduce the fat, salt and sugar in their diets; however, all too often, they don't recognize where these components are in foods or how to lower their intake. As research continues in these areas and as consumers continue to seek the answers to their questions, programs will continue to be needed that address the risk factors associated with various health problems and appropriate lifestyle changes.

Overweight and obesity have reached epidemic proportions and have become one of the most pressing health issues for our nation and state. These conditions are increasing in all age groups of all races and ethnicities. Sixty-one percent of adults in the US are overweight or obese. There are almost twice as many overweight children and three times as many overweight teens today as there were two decades ago. Action by a broad array of individuals and public and private partners is essential to reverse this trend.

Lifecycle Concerns

One of the best indicators of maternal and child health is the infant mortality rate, or the number of babies per 1000 live births that die before their first birthday. North Carolina has historically had an infant mortality rate well above the national average but over the past few years has improved to 9.9. This rate, however is still high and reflects the need for continued programming in the maternal and child area.

No time is more important than childhood to promote healthy eating and health practices. Children in North Carolina do not consume enough fruits or vegetables and have diets that are low in fiber and higher in fat than recommended. Children in North Carolina need quality nutrition education to help positively influence their food choices. For nutrition education efforts

to be effective they must also include parents and care givers. Helping families make informed decisions about their nutrition will help ensure that North Carolina's children grow to reach their full mental and physical potential. Overweight in children in North Carolina continues to rise. Preventing overweight and obesity in children is essential to address this issue.

Demographic changes in North Carolina's population continue to impact nutrition and health issues. The fastest growing age group in the state is the 65 years-and-over segment. The elderly run disproportionate risks of malnutrition and poverty as well as poor overall health status. In fact, over 85% of older adults suffer from chronic diseases and could benefit from dietary intervention. The general nutrition needs of the well elderly must be addressed; however, the needs of the elderly for prevention of malnutrition and chronic disease actually begin much earlier in life. Programs addressed to young adults and the middle-aged consumers will continue to impact the health of the population as it "ages."

Women are employed in greater numbers, and many of them are among the ranks of the working poor. Over 80% of women who had school-aged children were working outside the home; 67% of women with youngest child under six years were in the labor force. For working parents with very limited resources, lack of after-school and summer programs for youth are a major concern.

Performance Goal #1

Participants will adopt behaviors to promote a healthier diet.

Output Indicators

Number of participants consuming more fruits and vegetables
 Number of participants making one or more positive dietary change
 Numbers of participants increasing knowledge that will promote a healthier diet
 Numbers of participants increasing skills that will promote a healthier diet

Outcome Indicators

Numbers of participants adopting dietary behaviors that are consistent with behaviors promoted in the dietary guidelines

Key Program Components

The key teaching components of the objective will include Worksite Wellness programs, health fairs, workshops and demonstrations, after-school programs, parent-teacher programs, and face-to-face encounters. Media will be used to effectively disseminate a clear message about healthy eating patterns. Programs such as the Physicians' Project, Partners in Wellness and Out For Lunch will help participants adopt healthy dietary behaviors.

Performance Goal #2

Participants at risk for chronic disease/condition will change behavior resulting in reduced risk.

Output Indicators

Numbers of participants who increase knowledge in how to reduce risk for chronic disease
 Number of participants who adopt one or more behaviors consistent with decreasing the risk of chronic disease

Outcome Indicators

Number of individuals reducing risk factors for chronic diseases (heart diseases, strokes, cancers, adult-onset diabetes, arthritis, atherosclerosis, and osteoporosis) including:

- Numbers who decrease high blood cholesterol level
- Numbers who decrease high blood pressure
- Numbers who decrease high blood sugar
- Numbers who decrease excess weight (exact amount of wt. lost/person)
- Numbers who increase exercise (exact amount of exercise/person) eg. so many miles/week for so many weeks/person
- Numbers who decrease sodium in diet
- Numbers who increase fruits and vegetable consumption

Key Program Components

The key teaching components of this objective will include demonstrations/workshops, health fairs, video and audio tapes, home study kits, supermarket/farmer's market tours, and discussion groups and support groups. The mass media will be used to effectively disseminate messages about the relationship between chronic disease and eating patterns. Programs such as Give Your Heart A Healthy Beat and NoonLiting will help participants adopt eating patterns that will decrease their risk of chronic disease.

Performance Goal #3

Participants in nutrition and wellness programs for parents or care-givers and/or children will improve knowledge and adopt behaviors to promote a healthy diet.

Output Indicators

Parents increase awareness and knowledge of importance of good nutrition for children.
 Child care providers increase knowledge about the importance of good nutrition for children and the importance of teaching children about nutrition.

Outcome Indicators

Children adopt food behaviors consistent with the Dietary Guidelines and Food Guide Pyramid.
 Child care providers teach children about the importance of a healthy diet based on the Dietary Guidelines and the Food Guide Pyramid.

Key Program Components

The key teaching points for this objective will be training in nutrition for child-care providers, in-home study for parents and children, health fairs for parents and care-givers, one-on-one discussion with parents, and work in the classroom and child-care setting with children. Mass media will be used to effectively disseminate nutrition messages to parents and child-care providers about the importance of helping children to form healthy eating habits early in life. Programs such as Color Me Healthy, Out For Lunch and SyberShop will be used to educate caregivers and children about healthy eating and physical activity.

Performance Goal #4

Limited resource audiences will adopt behaviors that improve the nutritional adequacy of their diet.

Output Indicators

Number who showed improvement in one or more food resource management practice
 Number who showed improvement in one or more food safety practice

Outcome Indicators

Number who showed improvement in one or more nutrition practice

Key Program Components

The key teaching components of this objective include neighborhood groups, preformed groups, one-on-one contacts, volunteers and use of the media. Programs such as the Expanded Food and Nutrition Program, Breastfeeding Program, Hey What's Cookin'? (for pregnant teens), Color Me Healthy, Out For Lunch, Project Eat Right: Add to Life, and Partners In Wellness will all help limited resource audiences adopt behaviors that improve the nutrition adequacy of their diet.

Target Audiences for Performance Goals 1-4

General population above 2 years of age
 Other food, nutrition, and health professionals
 Teachers
 Child-care providers
 Parents
 Business/industry
 4-H leaders, volunteers, and youth
 Coaches
 Working families
 Unemployed families
 Young families with children who qualify for food assistance (WIC, Food Stamps, reduced price or free school lunch)
 Pregnant women
 Pregnant and parenting teenagers
 4-H aged youth
 Elderly

Individuals (above age 2) with increased risk of chronic disease (such as heart disease, cancer, stroke, and diabetes or conditions (allergies, osteoporosis) that require some special dietary need)

Minorities (generally at a higher risk than rest of population)

Limited resource individuals (limited culturally, financially, etc.)

Work-site groups in business and industry Extension Homemakers

Individuals referred by physicians for risk-reduction programs

Internal and External Linkages (for Performance Goals 1-4)

There is limitless opportunity to network, collaborate and form coalitions with others to provide the public with quality nutrition education. Such opportunities include but are not limited to:

North Carolina universities and colleges

Federal and state agencies

Media

Faith community

Child-care centers and family day care homes

Local and regional hospitals

Physicians

Boys and girls clubs

Head Start

Parent and Teacher Organizations

Family resource centers

After school programs

Public schools

4-H Youth Development

Corporate partners

FTEs & Program Cost for Goal 3

State FTEs - 7.5	County FTEs- 21.75	Program cost- \$1,611,866
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NCCES state FTEs – 6.5	County FTEs- 21	Program cost- \$1,542,986
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NC A & T state FTEs –1.0	County FTEs -.75	Program cost- \$68,880
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GOAL 4

AN AGRICULTURAL SYSTEM WHICH PROTECTS NATURAL RESOURCES AND THE ENVIRONMENT

Production of livestock, poultry, and agronomic, horticultural, and forestry crops is economically, socially and environmentally important to the citizens of North Carolina. Roughly 30 percent of the state's GNP is derived from on farm production or value added to farm products. While agriculture remains the single largest source of income, the active farm population continues to decline; yet, there is constant migration from urban to rural areas resulting in a growing rural population. Increasing livestock and poultry production combined with migration of non-farm population into agricultural production areas has resulted in much conflict between livestock producers and non-farm residents. There is much concern about nuisance odor and pollution of surface and ground water from mismanaged manure products.

Nearly half of North Carolina's population relies on ground water for water supply with more than 1 million wells currently in use. While groundwater supplies are generally of good quality for drinking, elevated nitrate levels have been detected in some intensive agricultural areas, in particular counties that have experienced rapid livestock growth. Proper management of animal waste by-products is paramount to protecting ground water quality.

The N.C. Division of Water Quality estimates that 28 percent of the 37,657 miles of freshwater streams and rivers are impaired with nonpoint source pollution accounting for over 75 percent of the impaired mileage. Major causes of impairment are sediment, fecal coliform bacteria, and nutrients. Loss of riparian buffers adjacent to streams is a major factor affecting stream water quality; these areas are an important resource for protecting valuable aquatic resources from the potential negative impacts of nearby agricultural land uses. In order for agricultural producers to comply with environmental regulations and maintain economic productivity, many management and structural practices must be implemented.

Development of new technologies and educational programs to help producers, agribusiness, and agricultural service agencies adopt practices that manage water, waste, soil, nutrients and pesticides to protect the environment and maintain productivity is needed. Targeted practices include nutrient management, riparian buffer and stream bank restoration, practices to reduce soil erosion and sediment delivery to surface waters, and sustainable production systems that utilize reduced tillage and integrated pest management. Target agricultural audiences include: livestock, poultry, and fish producers; field crops producers; nursery and greenhouse growers, and turf and landscape professionals; agribusiness professionals and commodity organizations; and agricultural services agencies. Key forestry efforts will be coordinated to target and promote sustainable forestry practices to preserve and protect ecosystem integrity and biodiversity and to protect, sustain and enhance water, soil and air resources. Target audiences will include loggers, landowners and professional forest managers.

Education is also needed for non-agricultural citizens, including lawmakers, on the complex relationships between agriculture, silviculture, and the environment so that effective and reasonable pollution reduction programs can be developed and implemented. Programs will be targeted to public officials, environmental interest groups, the media, consumers, educators, and related industries, such as agribusiness and financial institutions, to increase their understanding of and appreciation for the complex relationships between production systems, natural resources and the environment.

Performance Goal 1

Livestock, poultry, and fish producers will adopt and promote sustainable, economical and environmentally sound practices to manage water and waste materials for the purpose of improving air and water quality protection.

Output Indicators

Number of land application operators trained and certified
Adoption of best management practices (BMPs)

Outcome Indicators

Tons of soil erosion reduced on pastures, feedlots, and land application fields

Economic value of livestock organic by-products utilized
 Producers utilizing approved waste utilization plans
 Number of farmers adopting BMPs

Target Audiences

Poultry producers, swine producers, beef producers, dairy producers, horse owners, goat producers, sheep producers, fish producers and animal waste management system operators

Performance Goal 2

Field crop producers, nursery and greenhouse growers, turf and landscape professionals, and forestry professionals will adopt and promote economically and environmentally-sound practices to manage water, soil, nutrients, and pesticides for the purpose of enhancing environmental quality.

Output Indicators

Number of professionals completing certification/recertification courses
 Number of producers utilizing IPM
 Number of acres of best management practices adopted
 Number of pesticide certifications and re-certifications
 Number of farms establishing field borders, filter strips, permanent wildlife cover

Outcome Indicators

Reduction in number of pounds of commercial fertilizer applied
 Reduction in tons of soil loss achieved through BMP adoption
 Acres of wildlife habitat established
 Reduction in pounds of pesticide used

Target Audiences

Field crop producers, nursery and greenhouse growers; turf and landscape professionals; agribusiness professionals and commodity organizations; landowners and foresters; waste and nutrient management consultants

Performance Goal 3

Special interest groups, including public officials, environmentalists, the media, consumers, and youth will increase their understanding of and appreciation for the complex relationships between agriculture and the environment.

Output Indicators

Increased involvement in education programs in land use planning and natural resource management
 Number of programs delivered by multi-agency groups
 Number of organized contacts between agricultural community and special interest groups

Outcome Indicators

Increased participation in policy making

Adoption of local public policies that reflect both the agricultural community's and environmental interest

Public awareness and knowledge of the link between agriculture and the environment

Target Audiences

Field crop and livestock producers, Agribusiness Council, environmental groups, 4-H and youth, local and state lawmakers and decision makers

Key Program Components (Includes all performance goal areas)

Nutrient management training; BMP demonstrations, evaluation and implementation; animal waste operator certification; wastewater operator certification; Farm*A*Syst; waste record keeping; forest stewardship; ecosystem management; integrated pest management; Pesticide certification and licensing; pesticide container recycling and pesticide disposal; youth programs such as Project Learning Tree, Project WILD, Aquatic WILD, Catch Clinics, Wildlife habitat judging; Farm City week.

Internal and External Linkages

FSA; NRCS; NCDA&CS; NCDENR; USGS; Agribusiness Council; commodity groups; producer groups; local and state governments; agricultural, forestry and environmental consultants; environmental groups; Farm Bureau; NC Grange; agricultural credit and financial institutions; 4-H and youth groups; news media.

Program Duration: 5 + 2 years

FTEs & Program Cost for Goal 4

State FTEs – 31.85	County FTEs – 57.5	Program cost \$5,447,459
NCCES FTEs -State 31	County - 57	Program cost- \$5,371,859
NC A & T FTEs - State .85	County - .75	Program cost- \$75,600

GOAL 5

ENHANCED ECONOMIC OPPORTUNITY AND QUALITY OF LIFE FOR AMERICANS

Empower people and communities, through research based information and education, to address the economic and social challenges facing youth, families, and communities.

Statement of Issue

North Carolina is a very diverse state in every sense of the word; in terms of population, types of industry in the state, and in terms of the numerous agricultural commodities produced. The population of North Carolina has increased from 6.8 million people in 1990 to over 8.3 million

in 2004. During this same time period, the ethnical and racial diversity has increased due to the wide variations in the rates of change among the various groups. Based on US Census data, the Hispanic population of North Carolina grew by over 400 percent, compared to 150 percent increase of Asians, 15 percent for African-American, and 17 percent for whites. A recent study of the Latino population estimates that the growth in numbers of Hispanics from 1990 to 2003 has been in excess 610 percent. In addition North Carolina has a significant and growing Native American population. The population of the state is also diverse in terms of age with the retirement age segment growing due to in-migration as well as birthdays. The financial well being of the citizenry also varies widely from the most rural areas to the hi-tech areas in the Research Triangle Park. North Carolina has a wide variety of industries contributing to the general economy, ranging from the fisheries on the coast, to the Christmas tree industry in the mountains, to the furniture manufacturing in the Piedmont, to the farming industry that spans the state. There are many large industrial businesses as well as a rapidly increasing cottage/small business component of the state all contributing to the economic well being of our citizenry.

The diverse population described above faces many social and economic challenges. Some of these challenges stem from the fact the world now functions in a global economy rather than relying totally on the local economy. Consequently, there is a real need for citizens of North Carolina to understand the interrelationships between what happens in the economies of other countries and how that might affect our economy. Some of the challenges are due to the increased cost of living that has forced the “second spouse” to enter the work place. This puts more stress on the family unit while it creates a real need for improved child care and more child care providers. The decline in the demand for and the availability of entry level manufacturing jobs resulting from these firms moving off shore has put financial stress on a significant portion of the state’s population. Other challenges occur as a result of North Carolina becoming a prime retirement state as well as experiencing an aging population of its own. Some challenges are the result of a society that may be three to five generations removed from actual production agriculture. This has resulted in a society that is less understanding and less appreciative of production agriculture and the related “value-added” industries. The recent discontinuation of the peanut program and the impending major change in the tobacco industry is causing a significant economic uncertainty and emotional stress for many farm families. The ever-growing concern for a quality environment which has resulted in increased regulatory legislation is yet another challenge facing production agriculture as well as our citizenry as a whole. These and other social and economic challenges put North Carolina youth, families, and communities at risk.

The youth, families, and communities of North Carolina are at risk of failing to reach their fullest potential because they face the economic and social challenges characterized above. Improved understanding of the economic and social issues that exist today and the necessary leadership skills to face and meet these challenges is at the foundation of the extension educational program in North Carolina. North Carolina Cooperative Extension has designed and is delivering an inclusive educational program which improves the likelihood that the diverse audiences outlined above will reach their full potential. Continual evaluation of existing programs will ensure that all facets of the citizenry will be reached with our educational programs, and that the programs meet the needs of the diverse clientele.

North Carolina Cooperative Extension Service

Topic: National Conversation on Youth Development in the 21st Century

Full involvement in the National Conversation on Youth Development in the 21st Century will provide the North Carolina Cooperative Extension Service with a manageable, productive and long-term program design for youth development needs assessment and programmatic response. The program responds to every element of desired Extension program impact assessment and fiscal efficiency by 1) engaging local, state and national level stakeholders in a focused merit review process; 2) reaching and involving under served and under represented audiences in both program needs assessment and implementation; 3) integrating research and Extension activities in an atmosphere of partnership and collaboration; and 4) optimizing fiscal and staff resources in a multistate design in support of local action. Immediate and full engagement with the National Conversation on Youth Development in the 21st Century will prove a productive method of accomplishing the youth development mission of the North Carolina Cooperative Extension Service. A maximum of \$10,000 will be planned for this effort to be allocated as determined by NCCES. Funds will not be allocated directly to the National 4-H Council.

Performance Goal 1

The quality of child care will improve, and child care will be more available in North Carolina.

Output Indicators

- 1) Child care providers will increase knowledge and understanding of and implement quality child care practices.
- 2) Child care in North Carolina will be more available.

Outcome Indicators

- 1) Children in quality child care will improve in social-emotional, cognitive, and physical development as reported by parents, providers, and school personnel.
- 2) New slots and centers will be created.

Key Program Components

Program design, implementation, and evaluation tools are packaged for county unit program use.

Internal and External Linkages

Extension, community, non-profit and school-based educators in North Carolina; local, regional, and national child, youth, and family care providers

Target Audiences

Child, youth, family, and school-age care providers working in community, center, and school-based programs

Performance Goal 2

Leaders/participants (both traditional and non-traditional) in the community, public decision making process will improve leadership skills to more effectively participate in and assist communities meet social and economic challenges.

Output Indicators

Citizens/community leaders will increase knowledge and awareness of leadership, collaborative problem solving, and decision making skills.

Outcome Indicators

- 1) Number of persons participating in community/public policy decision making process
- 2) Number of persons demonstrating and adopting proper leadership and problem solving skills

Key Program Components

Involvement of current and potential community leaders in leadership and collaborative problem solving/facilitation training. Educational opportunities for citizens to learn how to effectively participate in the community decision making process.

Internal and External Linkages

Extension, community organizations, and local governmental officials and agencies.

Target Audiences

County officials, public/private leaders, local civic organizations, community leaders, and others interested in being involved in the community decision making process.

Performance Goal 3

Community leaders will implement policies promoting sustainable economic development, and business persons will design and maintain businesses.

Output Indicators

- 1) Number of citizens using fact sheets, video tapes, computer models, and curricula
- 2) Number of Citizens hosting and participating in focus groups and attending conferences

Outcome Indicators

- 1) Change in knowledge, attitude, and level of citizen/community action
- 2) Change in practice

Key Program Components

Involvement of local, private, and public leaders and business people in systematic educational opportunities to improve practice

Internal and External Linkages

Universities, community colleges, retired business executives, small business development centers, churches, and non-profit organizations

Target Audiences

Chambers of commerce, county commissioners, public/private leaders, local business and community leaders

Performance Goal 4

Consumers and families will make and use money management plans to conserve, extend, and/or increase personal/family income.

Output Indicators

Individual and family consumers will practice basic money management, financial planning, select and maintain affordable housing, use sound conservative decision making and extend/produce income.

Outcome Indicators

- 1) Individuals who develop and use money management plans
- 2) Persons keeping financial records
- 3) Persons improving individual/family savings

Key Program Components

Basic money management/planning and consumer attitudes and skills to impact income and savings for personal and family economic well being

Internal and External Linkages

Higher education, government and non-profit agencies and organizations

Target Audiences

Individual and family consumers, youth/students, current and potential entrepreneurs

Performance Goal 5

Individual and families planning for retirement will improve financial security, and improved elder care will be more available in North Carolina.

Output Indicators

Individuals and families will increase awareness and knowledge of financial, retirement, and estate planning techniques and opportunities. Awareness and knowledge of improved self and elder care giving skills will increase.

Outcome Indicators

- 1) Citizens will develop and adopt practices which will improve financial security in their later years.
- 2) Individuals and elder care givers will develop skills and adopt practices that will improve the quality of available elder care in North Carolina.

Key Program Components

Educational opportunities to improve personal financial planning and management, retirement planning, and estate planning and management are offered. Individual and care giver training will provide skills needed to improve quality of life during retirement.

Internal and External Linkages

Extension, community colleges, individual and licensed elder care givers, churches, non-profits, and community centers

Target Audiences

Individuals and families, elder care providers

Performance Goal 6

Long-term support systems will develop competent and responsible youth.

Output Indicators

Youth ages 5-19, adult volunteers, and donor sponsors will implement long-term support systems providing youth with increased life skills, expanded community service, and improved academic performance.

Outcome Indicators

- 1) Youth will develop and demonstrate life skills.
- 2) Total dollars saved by communities by youth service and work projects
- 2) Communities will benefit from hours of youth and adult volunteers labor.
- 4) Communities will benefit from maintenance of 4-H clubs and other long term units.

Key Program Components

Youth, families, and communities will be engaged through 4-H to expand life skills and personal and community assets for increased resilience through the use of research- grounded long-term educational designs to produce self-reliant, responsible citizens.

Internal and External Linkage

Higher education, local, regional, and national government of youth agency organizations, program design, delivery, and support agencies in private and public sector.

Target Audiences

Youth, ages 5-19, volunteers, donor/sponsors, program design, delivery and support collaborators.

FTEs & Program Cost for Goal 5

State FTEs - 21	County – 133.77	Program cost \$7,908,428
NCCES FTEs -State 19	County - 130	Program cost- \$7,669,637
NC A & T FTEs - State 2	County - 3.77	Program cost- \$238,791

Multistate Extension Activities and Integrated Activities
(forms on following pages)

**U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
 Establishment of Fiscal Year (FY) 1997 Baselines
 for Multistate Extension Activities and Integrated Activities
 Summary of FY 1997 Planned Programs/Activities and Expenditures**

**Institution N.C. Cooperative Extension Service
 State North Carolina**

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Total FY 1997 Expenditures
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
Total	<u>\$Unavailable</u>

Total FY 1997 Funds Allocated \$11,098,612

Preliminary Baseline Percentage None

Signed original plan by

Jon F. Ort
Director

6/23/2000
Date

Form CSREES-TARG (2/00)

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Establishment of Target Percentages
for Multistate Extension Activities and Integrated Activities**

Institution N.C. Cooperative Extension Service
State North Carolina

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Options for Determining Target Percentages (Circle one)

- A. 25 percent (Submission of Form CSREES-BASE is waived).
- B. Target Percentage of _____ (two times the Preliminary Baseline Percentage of Unavailable).
- C. (Option only available if higher than option B and less than 25 percent.)
Target Percentage of _____ for FY 2000 and thereafter.
- D. (Option only available if higher than option B and less than 25 percent.)
Target Percentage for FY 2000 and thereafter phase-in:

FY 2000 6.7

FY 2001	<u>8.4</u>
FY 2002	<u>14.2</u>

Signed original plan by

Jon F. Ort
Director

6/23/2000
Date

Form CSREES-TARG (2/00)

Special Note: Revised Plan

Continuing progress for 2004-2006 will meet and exceed planned expenditures compared to prior years.

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the 5-Year Plan of Work
Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)**

Institution N.C. Cooperative Extension Service
State North Carolina

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Estimated Costs

Title of Planned Program/Activity	FY 2000	FY2001	FY2002	FY 2003	FY2004
<u>Goal 1. A highly competitive Agricultural System</u>	<u>300,822</u>	<u>376,027</u>	<u>745,058</u>	<u>819,563</u>	<u>860,542</u>
<u>Goal 2. A safe and secure food and fiber system</u>	<u>26,925</u>	<u>33,656</u>	<u>106,589</u>	<u>117,248</u>	<u>123,110</u>
<u>Goal 3. A healthy, well-nourished population</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>Goal 4. An Agricultural system protecting natural resources and the environment</u>	<u>345,171</u>	<u>431,464</u>	<u>630,028</u>	<u>693,031</u>	<u>727,682</u>

Goal 5. Enhanced economic opportunity of quality of life 74,867 93,584 93,584 102,942 108,089

Total **747,785** **934,731** **1,575,259** **1,732,784** **1,819,423**

Signed by

Jon F. Ort

Director

6/23/2000

Date

Form CSREES-Plan (2/00)

Special Note: Plan Update

Continuing progress for 2005-2006 will meet and exceed planned expenditures compared to prior years.

AREERA *Integrated* NCSU NCCES & NCARS Programs Totals/Splits and Plans, Extension Smith Lever b & c, 1999, 2000.

Name	Research	Extension	Total R & E	Project #	Project Title
*Bilderback,			30-36=66	6224 06	Environmentally Compatible Nursery Crop Production Practi
*Evans, R			38-62=100	6427 6609 06	Evaluation and Modeling of Riparian Buffer Performance in Neuse River Basin
*Schultheis,			20-80=100	6596 05	Production Strategies For Impro Vegetable Production and Alternative Crops For Diversification
*Kay, S			31-69=100	6305 02	Integrated vegetation management in non-cropland Environments
*Marra, M			21-65=86 humini	6610 06 9676	The Economics of the Adoption Agricultural Technologies Waste treatment of swine
*Bottcher, R			73-27=100	0291	Interior environment and energy use in poultry and livestock facilities
*Monks, D			28-72=100	6327 03	Weed management for small fru and vegetables
*Vanduyn, J			28-62=90	0205	Ecology and management of European corn
*Yelverton,F			19-69=88	6453 02	Weed management in turfgrass forages
*Whitlow, L			10-90=100	6348 03	Mycotoxins/ effects on dairy ca

*Sanders, D				25-75=100	6380 04	Rotational and Compost System Vegetable Nutrient Cycling
*Spears, J				24-69=93	6632 06	Genetic and Production Environment Influences on Processing and Planting Quality Nutritionally Enhanced Soybean Seed
*See, T				20-80=100	6496 03	Genetic improvement in pork production systems & understanding genotype by environmental interaction
*Vulkina, T				40-30=70	6527 04	Risk Aversion, Risk Shifting and Alternative Payment Mechanisms In Settlement of Broiler Contract
*Lilley, S				13-78=92	0185 02	Commodities, consumers, and communities Local Food System In a Globalizing Environment
*Danielson				30-70=100	6237 02	Estimating impacts of community development options
*Brandt 1				38-38=76	--	Economics administration
*Sheffield, R				20-80=100	6423 03	Animal waste management processes to enhance treatment use to reduce environmental impacts
*Keener, K				40-60=100	5885 6482 03	Transport Phenomena In Agricultural And Biological Processes
Swartzel, K				31-11=42	0836, 05 5661 02	Improvement of thermal processes for foods; Aseptic processing and packaging studies
*Rideout, J				50-50=100	6558 04	Plant nutrition programs for mountain crops
*Crozier, C				30-70=100	6652 06	Precision Agriculture For Agronomic Crops and Nitrogen Management For Corn In Eastern North Carolina

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Year	# Project leaders	Smith-Lever b & c Allocated	% of 1997 base
2000	27	\$747,785	6.7 % of \$11,098,612
2001	27	\$934,731	8.4 % of \$11,098,612

2001: Nine Additional Projects

Name	Total \$	Research	Extension	Total R & E	Project #	Project Title
York, A				20-70=90	6417 05	Weed management and Growth Regulators for agronomic crops
Poling, B				24-76=100	6324	Cultural Management of Strawberries and Grapes
Ferket, P				12-88=100	6343 04	Nutrient and By-Product Utiliza and Health of turkeys and broiler
Grimes, J				15-85=100	6390 06	Effect of management on Turkey Production, Turkey Reproduction And Turkey Waste Handling
Sheldon, B				15-85=100	0292 04	The poultry food system;A Farm To Table Model
Green, D				20-80=100	6392	Innovative seafood techniques f improved profitability
Washburn,				18-82=100	6600 03	Improving Reproduction Management of Conventional and Pasture-Ba Dairy Production Systems
Losordo, T				20-80=100	3975 05	Improved efficiency on water re aquaculture systems
Brandenbrg				26-74=100	6502 03	Management of Arthropod Pest Turf & Peanut

X Integrated Activities (Smith-Lever Act Funds)

Year	# Project leaders	Smith-Lever b & c Allocated	% of 1997 base
2000	27	\$747,785	6.7 % of \$11,098,612
2001	27	\$934,731	8.4 % of \$11,098,612
2002	37	\$1,575,259	14.2 %
2003	37	\$1,732,784	15.6 %
2004	37	\$1,819,423	16.4 %

1997 Smith-Lever=\$11,089,612

1997 Regular Hatch=\$4,739,349

INITAL PLAN compiled 6-2000

Integrated Research Projects Planned for 2005-2006

GOAL 1. AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY

Integrated Project	<i>Project #</i>
Production Strategies For Improved Vegetable Production and Alternative Crops For Diversification	6596
Nutrient cycling in vegetable cropping systems	6380
Weed management for small fruits and vegetables	6327
Weed management in turfgrass and forages	6453
Mycotoxins and their effects on dairy cattle	6348
Genetic improvement in pork production systems and understanding genotype by environmental interaction	6496
Improving reproduction and management of dairy cattle	6600
Genetic and production environmental influences on processing and planting quality of nutritionally enhanced soybean seed	6632
Management of Arthropod Pests of Turf and Peanut	6502
Ecology and management of European corn borer	0205
Plant nutrition programs for mountain crops	6558
Weed management and growth regulators for agronomic crops	6417
Risk aversion, risk shifting and alternative payment mechanisms in settlement of broiler contracts	6527
Fish Food Ingredients Produced By Solubilization/Reprecipitation	06616
Cultural Management of Strawberries and Grapes	6324
Economic Evaluation of Technical Change in Cotton, and Peanut Production	5735
Economic Decision Support For Sustainable Agricultural Production	6528
Use of alternative supplements in grazed, hayed and ensiled forage systems for beef cattle	6480
Nutritional Strategies to Improve the Growth, Productivity, and Profitability of Dairy Cattle	6605
Nutrient requirements of swine for profitable production	6495
Using Remote Sensing to Manage Nitrogen In a Corn-Wheat-Soybean Rotation	6425
Development and refinement of strategies for peanut production in NC	6466
Developing New Crops and Sustainable Production Systems For Vegetables and Medicinal Herbs	6595
Influence of orchard management on tree growth; Rootstock and interstem effects on Pome and Stone Fruit trees	6196

Farming System Impacts on Strawberry and Tomato Diseases and Soil Microbial Ecology: Short and Long-Term	6641
Maximization of laying hen performance Economic Return, and Egg Quality	6184
Mountain aquaculture research	6153
Small fruit production systems	5830
Strategies to Increase Meat Goat Production	6701
Integrating Crops and Livestock Systems	6602
Price Risk Management Strategies in Food and Grains Marketing	6510
Integrated Peach Disease Management	6160
Management of Arthropods on Fruit and Vegetables	6402
Crop Improvement Strategies	6515

**GOAL 2
A SAFE AND SECURE FOOD AND FIBER SYSTEM**

Transport phenomena in agricultural and biological processes	5885, 6482
Improvement of thermal processes for foods; aseptic processing and packaging studies.	0836 5661
The poultry food system: A farm-to-table model	0292

**GOAL 3
A HEALTHY, WELL-NOURISHED POPULATION**

No research projects are currently underway or planned for this goal.

**GOAL 4
AN AGRICULTURAL SYSTEM WHICH PROTECTS NATURAL RESOURCES AND THE ENVIRONMENT**

Environmental nursery crop production	6224
Evaluation and modeling of riparian buffer performance in the Neuse River Basin	6609
Economics of adoption of agricultural technologies in waste treatment of swine	6610
Precision agriculture for agronomic crops and nitrogen management for corn in Eastern North Carolina	6652
Integrated vegetation management in non-cropland environments	6305
Nutrient and by-product utilization and health of turkeys and broilers	6343
Effect of management on turkey production, turkey reproduction and turkey waste handling	6390
Community-Wide Impacts and Management of Septic Systems	6372
Biology and control of Nuisance Vector Arthropods	6479

in NC	
Improved efficiency of water reuse aquaculture systems	3975
Bioavailability, transport and fate of contaminants in aquatic eco systems	6509
Evaluation of Tillage Practices, Organic Production, and trickle Fertigation for Nutrient Management	6648
Animal Manure and Waste Utilization, Treatment and Nuisance Avoidance	1000

GOAL 5 ENHANCED ECONOMIC OPPORTUNITY AND QUALITY OF LIFE FOR AMERICANS

Implications of Technological and Social Changes for the Food System	6565
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U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Establishment of Fiscal Year (FY) 1997 Baselines
for Multistate Extension Activities and Integrated Activities
Summary of FY 1997 Planned Programs/Activities and Expenditures

Institution N.C. Cooperative Extension Service
State North Carolina

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Total FY 1997 Expenditures
<u>Competivenous and sustainability of the Southern dairy industry (SERA-IEG)</u>	<u>\$1,360</u>
<u>Regional Forestry Specialist, A consortium of all Southern Region states for forestry program leadership and coordination</u>	<u>\$11,113</u>

Total \$12,473

Total FY 1997 Funds Allocated \$11,098,612

Preliminary Baseline Percentage .0112%

Signed original plan by

Jon F. Ort
Director

6/23/2000
Date

Form CSREES-TARG (2/00)

AREERA 1997 Multistate Activities (Smith-Lever funded)

Goal 1.

Project 1. SERA-IEG

Competiviness and Sustainability of the Southern Dairy Industry

Amount funded: \$1,360

Goal 2.

No projects

Goal 3.

No projects

Goal 4.

Project 1.

Regional Forestry position

A consortium of all Southern Region states for forestry program leadership and coordinative efforts in linking programs from each state to more effectively streamline the flow of information across the region.

Amount funded: \$11,113

Goal 5.

No projects

TOTAL

\$12,473

Smith-Lever
\$11,089,612

Documented per cent

.0112 %

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Establishment of Target Percentages
for Multistate Extension Activities and Integrated Activities**

**Institution N.C. Cooperative Extension Service
State North Carolina**

Check one: **Multistate Extension Activities**
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Options for Determining Target Percentages (Circle one)

- A. 25 percent (Submission of Form CSREES-BASE is waived).**
- B. Target Percentage of _____ (two times the Preliminary Baseline Percentage of .0112).**
- C. (Option only available if higher than option B and less than 25 percent.)
Target Percentage of .096 for FY 2000 and thereafter.**
- D. (Option only available if higher than option B and less than 25 percent.)
Target Percentage for FY 2000 and thereafter phase-in:**

FY 2000	<u>.096</u>
FY 2001	<u>1.73</u>
FY 2002	<u>1.87</u>

Signed original plan by

Jon F. Ort
Director

6/23/2000
Date

Form CSREES-TARG (2/00)

Special Note: Plan Update

Continuing progress for 2005-2006 will meet and exceed planned expenditures compared to prior years.

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the 5-Year Plan of Work
Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)**

Institution N.C. Cooperative Extension Service
State North Carolina

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Estimated Costs

Title of Planned Program/Activity	FY 2000	FY2001	FY2002	FY 2003	FY2004
<u>Goal 1. A highly competitive Agricultural System</u>	<u>25,260</u>	<u>54,025</u>	<u>56,600</u>	<u>59,660</u>	<u>62,430</u>
<u>Goal 2. A safe and secure food and fiber system</u>	<u>0</u>	<u>42,900</u>	<u>45,100</u>	<u>46,900</u>	<u>48,800</u>
<u>Goal 3. A healthy, well-nourished population</u>	<u>8,700</u>	<u>9,600</u>	<u>9,600</u>	<u>10,000</u>	<u>10,500</u>

<u>Goal 4. An Agricultural system protecting natural resources and the environment</u>	<u>11,015</u>	<u>17,900</u>	<u>18,550</u>	<u>19,200</u>	<u>19,850</u>
<u>Goal 5. Enhanced economic opportunity of quality of life</u>	<u>61,100</u>	<u>67,275</u>	<u>77,975</u>	<u>66,400</u>	<u>68,200</u>
Total	<u>106,075</u>	<u>191,700</u>	<u>207,825</u>	<u>202,160</u>	<u>209,780</u>

Signed original plan by

<u>Jon F. Ort</u>	<u>6-23-2000</u>
Director	Date

Form CSREES-Plan (2/00)

Special Note: Plan Update

Continuing progress for 2004-2006 will meet and exceed planned expenditures compared to prior years.

AREERA 2000-2004 Multistate Activities (Smith-Lever funded)

Goal 1. AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY

Project 1. SERA-IEG

Competivness and Sustainability of the Southern Dairy Industry

Planned Funding Amount:

2000	2001	2002	2003	2004
\$1,860	\$1,925	\$2,000	\$2,060	\$2,130

Project 2.

Regional Orchard Floor Management Program

Serves the educational needs of growers in the North Carolina, South Carolina and Georgia mountain region.

Planned Funding Amount:

2000	2001	2002	2003	2004
\$14,000	\$14,500	\$15,000	\$15,500	\$16,000

Project 3.

Southern Region Small Fruit Center

Specialized assistance provided to small fruit growers in North Carolina, South Carolina and Georgia. Barclay Poling and others

Planned Funding Amount:

2000	2001	2002	2003	2004
0	\$27,500	\$28,800	\$30,500	\$32,000

Project 4.

Pork Industry Handbook

A consortium of states involved in developing an informational handbook for pork producers across the country. Todd See

Planned Funding Amount:

2000	2001	2002	2003	2004
\$4,500	\$4,900	\$5,300	\$5,700	\$6,000

Project 5.

Regional Vegetable Guide

This program involves the development and maintenance of an up-to-date technical and educational guide for commercial growers in North Carolina, South Carolina, Alabama and Mississippi.

Planned Funding:

2000	2001	2002	2003	2004
\$4,900	\$5,200	\$5,500	\$5,900	\$6,300

Goal 2.A SAFE AND SECURE FOOD AND FIBER SYSTEM

Project 1.

The Poultry Food System: A Farm to Table Model"

The primary objective of the project is to improve consumer safety, consumer acceptance and the commercial profitability of poultry meat and eggs by improving or reducing critical problems associated with the quality of poultry meat and eggs, specifically color, flavor, or texture of the product, and the safety of poultry meat and eggs, specifically colonization, contamination, and subsequent pathogen growth. Twelve states involved.

Planned Funding:

2000	2001	2002	2003	2004
0	\$42,900	\$45,100	\$46,900	\$48,800

Goal 3.A HEALTHY, WELL-NOURISHED POPULATION

Project 1.

Partnerships in Wellness

Nutrition education for the elderly, a program involving North Carolina and Georgia in a collaborative arrangement for program development and implementation.

Planned Funding Amount:

2000	2001	2002	2003	2004
------	------	------	------	------

\$5000	\$5200	\$5400	\$5600	\$5900
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Project 2.

Elderly Extension Core Group

A program focusing on planning curricula, program delivery means and expertise in elderly nutrition programs. The states of North Carolina, Florida, Kansas, Missouri, Ohio and Virginia participate.

Planned Funding Amount:

2000	2001	2002	2003	2004
\$3700	\$4000	\$4200	\$4400	\$4600

Goal 4. AN AGRICULTURAL SYSTEM WHICH PROTECTS NATURAL RESOURCES AND THE ENVIRONMENT

Project 1.

Regional Forestry position

A consortium of all Southern Region states for forestry program leadership and coordinative efforts in linking programs from each state to more effectively streamline the flow of information across the region

Planned Funding Amount:

2000	2001	2002	2003	2004
\$6,265	\$13,000	\$13,500	\$14,000	\$14,500

Project 2.

Environmental Protection Agency liaison Specialist

A consortium of 8 Southern states for coordinating Extension programs with EPA and other federal agencies relating to the environment.

Planned Funding Amount:

2000	2001	2002	2003	2004
\$4,750	\$4,900	\$5,050	\$5,200	\$5,350

Goal 5. ENHANCED ECONOMIC OPPORTUNITY AND QUALITY OF LIFE FOR AMERICANS

Project 1.

Southern Rural Development Center

Programs focus on fostering the economic and community development in the rural South.

Planned Funding Amount:

2000	2001	2002	2003	2004
\$1,570	\$1,615	\$1,675	\$1,750	\$1,800

Project 2.

School Age Child Care

A multistate program dealing with the educational needs of school age youth

Planned Funding Amount:

2000	2001	2002	2003	2004
\$51,450	\$53,000	\$54,500	\$56,000	\$57,500

Project 3.

4-H Volunteer Leadership Development Forum

A multisate program designed to train more effective leaders for youth programs.

Planned Funding Amount:

2000	2001	2002	2003	2004
\$4480	\$8960	\$18,000	\$4750	\$4900

Project 4.

CYFERNet-Parent/Family Editorial Board

A board to guided the programs and activities of children, youth and families programs at 25 universities. The Board includes persons from 8 states

Planned Funding Amount:

2000	2001	2002	2003	2004
\$3600	\$3700	\$3800	\$3900	\$4000

Special Note: Plan Update

Continuing progress for 2005-2006 will meet and exceed planned expenditures compared to prior years for Multi-state Activities and Projects.