

NORTH CAROLINA COOPERATIVE EXTENSION

MAJOR PROGRAM ACCOMPLISHMENTS OVERVIEW

1997



**North Carolina
Cooperative Extension Service**

NORTH CAROLINA STATE UNIVERSITY
NORTH CAROLINA A&T STATE UNIVERSITY

NORTH CAROLINA COOPERATIVE EXTENSION SERVICE

PROGRAM ACCOMPLISHMENT REPORT 1997

Program Overview

The North Carolina Cooperative Extension Service provides educational programs to help North Carolinians improve the quality of their lives. North Carolina State University and North Carolina A & T State University deliver a coordinated Extension educational program available to all people in North Carolina.

In 1997, the North Carolina Cooperative Extension Service completed the second year of its long range plan, *Foundations For The Future*. This report represents many of the accomplishments of Extension educational programs during the calendar year of 1997. The successful achievements indicated in this report reflect the vast array of impacts that Extension programs are having on the people of North Carolina. These results are the end products of educational programs coordinated by the two cooperating land-grant universities in each of the state's 100 counties and the Cherokee Reservation. The programs are supported through the cooperation of county, state and federal governments, and a wide variety of organizations, groups, and individuals.

Extension's educational programs were planned and implemented in collaboration with thousands of the state's citizens. These programs reach all areas of the state, and a vast proportion of the state's population. The programs were evaluated to assess the resulting contributions to a profitable and sustainable agriculture; a protected and enhanced environment; stable communities; responsible youth; and strengthened families. The cumulative information that is reflected in the reported accomplishments demonstrates some of the scope and quality of Extension's programs for the benefits of the state's citizens.

The *Foundations For the Future* long range plan consists of twenty Cooperative Extension Major Programs, and within the construct of Extension's mission, these programs address priority needs of the state's citizens. Program accomplishments that have accrued during the calendar year, 1997 from implementation of this long range plan are included in this report.

Jon Ort, Director

Agriculture and Natural Resources Programs

1997 Accomplishments Overview

CEMP - 03 Agriculture and the Environment

The Agriculture and the Environment Program educates users about relationships between agriculture systems and the environment. It is intended to protect or enhance air and water quality through the promotion and use of economically and environmentally sound practices to manage air and water resources, waste materials, soil, nutrients, pesticides and petroleum products. The program captures the benefits of whole farm and watershed based programming and of collaboration with NRCS, SWCD and other agencies and organizations working to protect and enhance natural resources.

To equip users to implement BMP's to improve air and water quality, CES faculty trained 28,137 people in land application of animal wastes, landscaping BMP's, and pesticide application. To support environmentally sound nutrient applications, soil tests were analyzed on 350,000 acres; nutrient content of manures was determined on waste applied to 179,000 acres; and plant tissue analyses were conducted on plants on 12,250 acres.

Farmers, landscapers and other users implemented soil and water protecting BMP's and reduced erosion soil losses by 126,500 tons on cropland, pastureland, and on high use areas. Through using animal and poultry wastes as fertilizer, growers captured 10,020 tons of nitrogen and 10,485 tons of P2O5, valued at \$6.4 million, for use on field crops, forage crops, and horticultural crops. Use of commercial sources of nitrogen were reduced by the equivalent of 78,600 pounds of nitrogen compared to conventional or previous rates; phosphorus use was reduced 75,000 pounds.

Using bioengineered genetic material, growers reduced pesticide use by 159,000 pounds. State-wide, producers saved an estimated \$4.9 million by application of integrated pest management and other practices and technologies designed to reduce reliance on pesticides. Wildlife habitat was established on 9,829 acres. Growers recycled 220,000 pesticide containers, saving \$120,000 in landfill charges.

The target audience realized cost savings and added value through improved nutrient use and pesticide savings, alone, that totaled \$11.3 million. Estimated cost of the program was \$1.7 million; volunteers provided 18,000 hours of effort valued at \$180,000.

CEMP - 04 Animal Production and Marketing Systems

The Animal Production and Marketing Systems program extends to all major species--dairy and beef cattle, swine, horses, sheep, goats, poultry and aquaculture species. With some species, programs have focused on problems and opportunities associated with growth of the industries, particularly in the environmental arena. For others, the focus is to restore or sustain profitability. There is an ongoing need to seek, evaluate, and integrate new enterprises that can enhance the income stream on farms. This program targets two clientele groups--farmers and their families, and the general public.

Many of the program elements that provide effective education and information transfer to these audiences involve systems or integrated approaches. Recently, the following "systems based" programs have been developed: "Certified Beef Production"; grazing management schools; "DairyWise"; equine short courses; "Professional Swine Managers Training." These systems programs focus producers' attention and actions to integrated systems thinking.

Production and economic impacts on farms are manifested through improved nutrition, breeding, marketing and uses of buildings and facilities. Producers who have implemented changes in their operations because of education and information transfer provided in the areas above, and others, have realized the following impacts:

Value of enhanced nutrition management	\$4.2 million
Value of optimized breeding systems	1.5 million
Value of enhanced marketing approaches	5.6 million
Value of recommended buildings/facilities use	2.7 million
Value of enhanced practices to limited resource farmers	\$270,000

Other programs have had significant impact because they take needs based applied research results, developed by extension workers, directly to implementation. Educators working with aquaculture producers solved feed quality and disease problems that saved fish worth \$772,000. Implementation by the poultry industry of new mineral feeding strategies, demonstrated by poultry specialists, has a value of \$1 million annually. Rapid egg cooling technology could add annual premiums of \$15 million to shell egg producers nationwide. Poultry Science and the College of Veterinary Medicine developed a plan for disease monitoring of poultry flocks to achieve early detection of highly infectious and transmissible diseases. Finally, feeding probiotics to quail has increased survivability worth \$300,000 annually.

Education and technical assistance in programming through networks have been instrumental in a number of situations. To meet educational needs of horse producers, 112 Regional Equine Information Network System (REINS) certified volunteers are at work. There is at least one volunteer in each county in the state. These volunteers provide information and education to horse producers. They annually devote 13,440 hours of effort, valued at \$201,600. Eastern Foods, organized with extension assistance, is a farmer owned cooperative that reduces input costs and

enhances market value for independent swine growers. In 1997, combined purchases were \$6 million, representing a savings to growers of 10% to 15%. Youth livestock, poultry and horse programs network youth, parents, educators, volunteers, advisors, agribusinesses and other organizations into an outreach program that is the targets in the US according to ES237 reports. The long term value of these programs is in student recruitment, leadership development, and citizenship.

In the general public, 28,000 people gained understanding and appreciation about animal agriculture. Over 17,000 people gained increased knowledge of their food supply and food quality standards, and 2,242 farmers adapted practices and standards to address issues and concerns of the public.

The value of volunteer time devoted to this program in 1997 was \$226,800.

CEMP - 07 Crop Production and Marketing Systems

The Crop Production and Marketing Systems program serves agronomic, horticultural and forestry crop industries involving 4.1 million acres and generating \$2.5 billion. The diversity of these crops is fundamental to economic viability of producers in these industries. This program addresses the educational and information needs of full and part-time farmers, limited resource farmers, agribusinesses and non-farm citizens. The overall aim of the program is to provide research based information on production practices, marketing strategies, application of new technologies, environmental issues and government regulations..

Many of the impacts of this program have been realized through implementation of innovative technologies. These innovations are intended to enhance farm income through savings in input costs, enhance market value and enhanced environmental impacts. Some of the innovations reported included the introduction of a new baling system for tobacco, use of bioengineered plant genetics, irrigation scheduling programs, accessing World Wide Web sources for information on commercial vegetable production, temporary burley tobacco curing structures, and GreenWise management program for nursery operators.

Other impacts have resulted from applying "systems thinking" to farm, nursery and woodland operations. Some examples include Integrated Pest Management strategies on row crop, orchard, nursery, Christmas tree and organic farms; weather based advisories for disease control; enhanced efficiency and diversification in management and use of tobacco transplant greenhouses, enhanced marketing and risk management to gain long term sustainability.

Finally, much program efforts have been directed to educating farmers and the public about key issues impacting crop production and marketing systems. Some of the key issues include land application of animal and other waste materials, reduced pesticide use in cropping systems, prevention of soil erosion and sedimentation, farm diversification strategies, reduced nutrient loading in ground and surface water,

applications of genetically engineered crops, and improved profitability.

The following specific impacts were reported:

292 farmers adopted new marketing options which generated more than \$3 million in additional profits.

Over 2,870 growers implemented improved practices on 167,000 acres and generated additional profits of \$10 million.

More than 360 growers added new crops to their farming systems, affecting 14,973 acres and increasing income by \$969,000.

Growers of a variety of crops adopted BMP's such as variety selection, IPM, and no-till systems. Implementation of these practices on their farms generated an almost \$27 million in added income.

Four thousand growers used IPM practices on 616,000 acres and saved \$5 million dollars in reduced pesticide use. It was estimated statewide that these programs reduced pesticide used by over 433,000 pounds of active ingredient.

An estimated 4,200 growers used genetically engineered crops on over 127,000 acres, resulting in increased income of \$2.3 million and saving \$720,000 in reduced pesticide needs.

About 3,000 growers adopted new crops or products and/or new marketing strategies. These outcomes were associated with \$3.9 million in additional income.

An estimated 39,000 citizens became more aware of the value of efficient cropping systems, the aims of the IPM program to reduce pesticide use, the risks and benefits of genetically engineered crops, and global trends and trading practices.

CEMP - 14 Marketing and Production of Alternative Agricultural Opportunities and Enterprises

The Marketing and Production of Alternative Income Opportunities and Enterprises program assists commercial and small, part-time and limited resource farmers in selecting and implementing alternative opportunities to increase their income. Focus areas include horticultural and specialty crops, livestock, marketing, risk management and natural resources conservation.

Of producers who participated in this program, 256 commercial and 342 small, part-time or limited resource growers tried alternative enterprises, methods or practices in their operations. For commercial growers, the value of new investment in producing and marketing alternative enterprises was \$632,000. The added value of production

of the new enterprises was \$1,216,000. An additional \$715,000 was realized by small, part-time, and limited resource farmers who integrated new enterprises into existing operations.

Marketing of locally grown products was reported by a number of counties participating in this program. Several counties reported direct involvement of CES in helping growers establish farmers markets, marketing cooperatives, and niche markets for specialty products. Business management, including risk management and farming in distress, programs were conducted in three counties. In addition, the program focus on risk management has helped farmers set business goals and develop a business plan.

The value of volunteers' time devoted to this program area was \$14,000. Appropriated funds in support of the program were estimated at \$99,000.

CEMP 02: Agriculture and Natural Resources Policy

The Agriculture and Natural Resources Policy programs are directed toward improving the efficiency and effectiveness of agriculture and natural resources policy through better informed stakeholders, decision-makers and the general public. Educational programs were related to technical subject matter, thus relating directly and cooperatively with at least 8 other CEMPs and on the process of policy development and decision-making. The premiere Natural Resources Leadership Institute continues to have an impact in North Carolina. In 1997, 26 participants were enrolled in the third Institute and 30 fellows graduated from the 1996 program. Program participants were involved in a number of local and state-wide issues. One agent, who was a part of the institute, facilitated the resolution of a landowner-hunter controversy in a neighboring county at the request of the agent and county commissioners. Other programs have resulted in a Farmland Preservation Ordinance in one county and a Voluntary Agricultural Districts Ordinance in another county. Funding from the North Carolina General Assembly led to the creation of 5 area specialized agents to provide information and facilitate adoption of practices to improve water quality in the Neuse River Basin. The effectiveness of this cadre of agents in informing the public and various organizations on the importance of water quality in the Neuse River has led to enhanced, collaborative programs with other agencies and organizations and expectations for similar efforts in other river basins.

Extension has been instrumental in resolving water quality issues in areas other than the Neuse River basin, in addressing animal waste management policies and regulations, land management controversies, pesticide rules and regulations, and use of Best Management Practices in various situations. Over 3,218 people participate in extension educational efforts, involving 155 volunteers. It is difficult to determine the value to society of extension efforts when resolving or even preventing potential conflicts. However, estimates indicate a value of more than \$10,000,000. Extension continues to work to train its own personnel as well as those of other agencies and organizations on the facilitation and collaborative problem solving processes as a

means of minimizing conflict and enhancing cooperative solutions.

CEMP 06: Community and Economic Development

The establishment of community organizations and enhancement of the organizational and leadership skills of community members are essential to the improvement of services and quality of life of communities. In 1997, Extension faculty worked with over 2,900 people resulting in 24 new community organizations and the development of 41 new community development projects. Educational programs to assist community leaders in using economic development concepts and tools to promote sustainable economic development have included over 753 people with subsequent application of computer models, videos and fact sheets in local communities. Over 430 persons participated in conferences. As a result, 7 new businesses with a payroll of \$300,000 were attracted to participating counties. Other educational programs resulted in the development of 19 new small and home-based businesses with a payroll of \$149,249. Two hundred and twelve people increased their income as a result of participating in these workshops. Additional program efforts have resulted in the establishment of a regional advisory committee in western North Carolina, involvement of limited resources citizens in community building design and use, enhancement of public access to the information super highway, and development of alternative recreational and eco-tourism opportunities. Over 2,100 volunteers participated in all aspects of the community and economic development program. Overall program efforts provided a value of nearly three-quarters of a million dollars.

CEMP 10: Food and Forest Products Manufacturing

The food products industry has turned from an inspection-based safety system heavily dependent on regulatory input, to a system now in tune with Total Quality Management. In this new system, production processes are analyzed for potential hazards, controls are identified for the hazards, and monitoring of these controls by measurable criteria is affected. Reporting and verification steps keep the system working. Training has been conducted for 1,200 food processing personnel. The Extension Service developed Seafood HACCP Training Curriculum has been recognized by FDA as the national model. Assistance has been provided to over 200 businesses involved in food processing and at least 30 new companies were assisted in start-up.

Forest products manufacturers will increase their productivity, profitability, competitiveness and utilization of innovative technology. New manufacturing techniques were adopted by 257 firms. Consumers also increased their knowledge of the economic importance of the wood products industry (917), their understanding of forest products and their proper use (809), and 93 consumers adopted practices related to selection, use and maintenance of wood products. Improved utilization or productivity of wood processing firms resulted in a savings of \$2,160,000. There was an increased production of value-added products worth \$4000,000,000. Dollars saved through improved yield, efficiency, and marketing was at least \$3,340,000.

Three thousand five hundred people attended the 1997 Carolina Log'n Demo to view state-of-the-art harvesting equipment and learn about water quality, safety, and other issues related to the logging industry. In addition, 72 exhibitors from 12 states and Canada showcased over 150 product lines. Estimates indicate the exhibitors sold over \$10,000,000 in equipment and \$200,000 was injected into the local economy.

CEMP 15: Natural Resource Conservation and Management

Natural Resources Conservation and Management programs increase environmental awareness among youth, increase involvement and the quality of decision-making by citizens, increase market sale of timber and recreational leases on private lands, and increase the fisheries and wildlife value accruing to landowners and lease holders. In 1997, the estimated value of the programs delivered to over 45,000 citizens was \$8,795,035. Over half of the 1,064 volunteers involved in these programs were associated with 4-H summer camping programs and Project Learning Tree. To address the needs of a growing Hispanic audience, a Spanish version of "School Yard Environmental Projects: A Planning Primer," and a Spanish and English activity sheet, "School Yard Environmental Projects," were published and distributed.

An additional 21,371 acres were entered into the Forest Stewardship program; 1,086,850 acres of private land was leased for wildlife recreational purposes as a result of extension educational programs. On-going educational programs on timber management and marketing have netted landowners increased profits, in one case as much as 260% over initial sales offers. Research and demonstration projects in the Coastal Plain of North Carolina and the Piedmont of Virginia dedicated to understanding wildlife and water quality values of field border systems in association with row crop agriculture is expected from the basis for enhanced Farmland Stewardship programs.

CEMP 17: Residential and Community Horticulture, Turf, Forestry and Pest Management

Demand for programs in the area of non-commercial horticulture and forestry and residential pest management continues to increase. The greater awareness of more diverse publics of the economic as well as environmental importance of landscape stewardship has emerged. CES programs seek to educate target audiences so they adopt best management practices for residential and public use facility pests. Programs also educate target audiences about proper selection and management of plants for residential landscapes, including turf, edible plants, ornamental plants and trees. The use of IPM (Integrated Pest Management) is important to fulfilling the objectives of this major program. At least 50,350 people increased their knowledge of IPM practices, 33,670 adopted IPM as a practice. This resulted in a savings to consumers of \$1,032,701 through reduced insecticide use and related purchases. \$398,079 was saved through reduced pesticide related contamination problems in municipal sewer systems, container disposal and other problems. Efforts continue to

proactively educate audiences through printed materials at retail centers, meetings, mass media and newsletters. Responding to calls and identification of pests also provides educational opportunities. Most calls regarding pests will not require over \$10 in additional purchases, but save about \$75 in professional fees.

The adoption of landscaping practices provided in Extension programs has increased property value of participants by \$4,245,801. 103,774 people have increased protection of the environment and urban ecosystem through proper plant health care, proper plant growth, and integrated pest management. A WaterWise program that promotes wise use of pesticides, fertilizer, water and proper soil care has been offered and proved successful in several counties. The Master Gardener Volunteer program continues to be an economical way to educate the gardening public. In 1997, 670 new volunteers were trained. The 1,649 volunteers donated 85,321 hours and assisted 430,460 gardeners. Volunteers contributed over \$33,484 in out-of-pocket expenses, drove over 447,052 miles, and raised \$58,436 for a total contribution of \$1,088,186. Successes abound at saving homeowners unnecessary expenditures, assisting local entities addressing issues such as rabies, and increasing the adoption of proper plant production and pest control techniques. In all, programs used 3,665 volunteers and had a value to target audiences of \$6,718,642.

Family and Consumer Sciences Programs

1997 Accomplishments Overview

The mission of the Extension Family and Consumer Education program is to provide individuals, families and communities with dynamic, issue-driven education to foster informed decision-making about human and environmental concerns in a changing world.

Each day, the North Carolina Cooperative Extension Service helps to strengthen our North Carolina families and communities. Our work is dedicated to improving the quality of people's lives. We rely on research-based information to develop educational programs; and we partner with volunteers and organizations to reach the goal of strong North Carolina families.

The following overview highlights programs during 1997.

CEMP 01 - AGING WITH GUSTO

The aging process is a continuum, and is different for each person. Extension aging programs are designed to help people experience positive aging through education to achieve optimum financial, physical and mental well-being in their later years. Older adults learn how to prepare for and cope with problems related to finances, legal issues, health, caregiving, housing and self-care.

A sample of statewide program impacts include:

Over 8,000 persons increased awareness and knowledge of financial management techniques and consumer issues, with 2,780 persons adopting financial management and consumer practices; 2,402 participants increasing awareness and knowledge of estate planning; over 1000 persons adopting estate planning practices; over 1300 persons increased awareness and knowledge of retirement planning and savings and over 400 persons adopted retirement and savings practices. The financial status of over 2600 persons was improved through the adoption of consumer and financial management practices. Older and mid-life adults received information through meetings, tours, educational publications, consultation, teletip and/or videos on such topics as consumer fraud and scams, Medicare Managed Care and estate planning.

Over 2600 people adopted practices such as decreased fat intake, decreased sodium intake, or increased fruit and vegetable intake. Persons reported avoiding \$160,215 of costs through reduced risk of chronic disease. Over 400 volunteers contributed 2,551 hours valued at \$25,510.

473 people adopted stress management and other self-care practices, including use of formal and respite service. 863 caregivers reported improved quality of life and decreased stress. Over 187 volunteers contributed 817 hours valued at \$8,170.

2733 people increased awareness and knowledge of housing options, financial options, and accessibility options that lead to affordable or accessible housing. Over 1300 people increased awareness and knowledge of practices that promote health such as use of medicines.

CEMP 08 - FAMILY AND CONSUMER ECONOMICS

This state-wide major program promotes informed personal and family finance, and other consumer decision making. Serious financial problems affecting families at all income levels can in many cases be prevented, and this program emphasizes education for prevention.

A sample of statewide program impacts include:

Over 5725 people increased awareness and knowledge about money management and the decision-making process; 1458 personal goals were made and written; 3014 people identified family and community resources; 2460 people demonstrated ability to use the money management skills and over \$121,415 dollars of debt was reduced.

7656 people increased awareness and knowledge of financial resources; 5372 people acquired knowledge of best management practices such as increased savings and investments, reduced consumer debt and more money designated for retirement management.

750 people adopted practices which lead to living independently or living in affordable housing; 2299 people increased awareness and knowledge about housing financial decision, and over 4000 increased awareness and knowledge about selection of affordable home furnishings and home improvements.

Over 6000 people increased awareness and knowledge of practices to extend or increase income and 1149 increased decision-making skills regarding employment or self-employment.

One county provided an Earned Income Credit program of Habitat for Humanity participants. Approximately 25 individuals received handouts and information concerning the Earned Income Credit program. One individual was able to file a tax return and received over \$3000, which allowed her to have extra income.

The NCCES in two counties and the Family Service Centers at Camp Lejeune, New River Air Station and Cherry Point Air State have collaborated to provide eight week-long workshops that trained 144 Command Financial Specialists, who in turn have helped an estimated 60,000 Marines and family members avoid or address financial problems. NCCES is helping evaluate this pilot project for the Marine Corps.

CEMP 09 - FAMILY AND PARENT EDUCATION

The Family and Parent Education major program is helping parents and families acquire the skills needed to foster responsibility, cooperation, courage and self-esteem. Educational emphasis is on strengthening family relationships through improved parenting skills, financial management and problem-solving skills, conflict resolution, effective communication and stress management. In addition, Extension personnel are equipped to make appropriate referrals for family services, support services, and self-help support groups.

A sample of statewide program impacts include:

The Family and Parent Education State Major Program is helping parents and families acquire and develop the skills needed to foster qualities of responsibility, cooperation, courage and self-esteem.

Over 21,000 individuals increased awareness and knowledge of developmental stages, basic needs, and appropriate behavior of children. 6820 families demonstrated improved family relationships through the resolution of financial conflicts. 7,550 families demonstrated improved responsibility of parents and children. 8,134 families adopted improved quality of family life by adoption of effective parenting through appropriate discipline techniques and critical nurturing practices. Counties reported offering a variety of educational programs related to parenting and child care including health and stability of the family; discipline strategies; communicating with children; developmental stages of children; nutrition education; financial planning; safety; child abuse awareness and prevention.

CEMP 11 - FOOD SAFETY AND QUALITY

Safety of the food supply is a shared responsibility. Producers, processors, preparers and consumers must follow appropriate food safety procedures so food enters and leaves their portion of the food supply chain safe for human consumption. Consumers not only deserve a safe food supply but one delivered in such a manner that they can determine it meets their nutritional quality needs.

A sample of statewide program impacts include:

Over 20,000 consumers increased their knowledge about safe food handling; 14,109 improved attitudes about the need to handle food safety; 2036 food service workers increased their knowledge about safe food handling; and over 1900 food service workers improved their attitudes about the need to handle food safety.

Educational programs have impacted food service workers and managers, government workers, child care workers, youth and homemakers. One activity reported was the formation of a food safety cadre of 12 food safety extension agents who have entered an intensive three-week on campus graduate course and have committed to a 2-year follow through to increase academic competency in the North Carolina Cooperative Extension Service.

Serving Safe Food is a nationally recognized 16-hour certification program developed by the National Restaurant Association. Three trainings have been jointly conducted by DHHS and faculty from NCSU to teach extension agents and environmental health specialists in the delivery of this program. Thirty-four extension agents and 71 environmental health specialists have completed the training in 1977. Eleven county teams (extension agents and environmental health specialists) have been formed and are actively planning joint SERVSAFE training(s) for local food service managers and workers. Five local county teams have successfully conducted this training for 243 food service operators in North Carolina.

Two 16-hour trainings were offered jointly with the Division of Aging in 1996 and 1997. Training topics include general food safety and sanitation. Seventy-six coordinators from across the state completed training, and six regional trainings have been scheduled.

CEMP 12 - HEALTH AND HUMAN SAFETY

Health and human safety are pressing public concerns at the individual, family and community levels. The Extension Service has developed community-based programs to enable individuals and communities to address health and safety needs in the areas of healthy lifestyles, home safety and crime prevention, agricultural health and safety, and community capacity building.

A sample of statewide program impacts include:

Over 46,363 participants increased their awareness and knowledge of preventative health behaviors such as eating properly, exercise, and safety in the home. 13,370 participants adopted recommended health care practices such as dietary intake. It has been estimated that almost \$171,000 in costs have been avoided due to Extension efforts.

2,051 individuals adopted practices to remove safety hazards in the home and 1761 adopted practices to increase home safety. 17,437 individuals adopted preventative measures including installing ventilation systems, radon, and carbon monoxide tests.

2490 participants were reported to have increased awareness of agricultural (chemical) exposure and other agriculturally related health risks. 2068 participants increased their awareness and use of personal protective equipment.

Sixteen strategic partnerships/coalitions have been formed for improving health statuses and 11 community health assessments have been conducted. Ten lay health advisors projects, immunization campaigns or early detection programs have been established to improve health status of citizens.

Stroke screening for senior citizens showed that 12 percent of the participants were at high risk for stroke. The Framingham Heart Study was used to determine those people at high, moderate, and low risk. Thirty percent of the participants were referred to a doctor. The warning signs of stroke were explained to all of the participants during their exit interview.

CEMP 16 - NUTRITION AND WELLNESS

This major program promotes optimum nutrition and healthy lifestyle management throughout life. Nutrition needs change throughout life and have a direct impact on health, quality of life and ability to achieve physical and mental potential. Diet related risks involved in chronic diseases can be lowered through changed behaviors and positive pregnancy outcomes can result from better prenatal nutrition.

A sample of statewide program impacts include:

Over 75,000 participants increased awareness of need to have good nutrition habits; 48,490 participants increased knowledge that promotes health; and 35,849 participants increased attitudes and aspirations that are indicative of a need for good health. 723 persons showed a decrease in high blood cholesterol; 663 showed a decrease in high blood pressure; 292 showed a decrease in high blood sugar; and 1000 showed a decrease in excess weight.

2538 parents adopted food behaviors consistent with the Dietary Guideline and Food Guide Pyramid.

The Family Nutrition Program supported by the USDA Food Nutrition Service was conducted in 40 counties with a focus on food stamp eligible families with three to five year-old children. One agent's comment after finishing the 4 sessions was, "Family Nutrition Program" participants have 'hands on' learning experiences. Many of the participants do not want the sessions to end. Family Nutrition participants have been hired as EFNEP program assistants while others come back as volunteers. In a letter with \$1,436 of support from the United Way in a county, the grantor stated, 'You are really making a difference in the lives of many women and children in our community'.

Counties reporting evaluation results for the low income audience, in general, indicated an improvement in food resource management practices for 75% to 97% of participants; and improvement in nutrition practices of 88% to 97% and 50% to 91% or participants reported improved food safety practices.

CEMP 18 - RESIDENTIAL AND COMMUNITY WATER AND WASTE MANAGEMENT

Residential and community water and waste management have environmental and economic impact on both private and public sectors in NC. Proper management of solid waste, wastewater and watersheds is necessary for optimum water quality.

A sample of statewide program impacts include:

9969 people increased their knowledge and awareness of best management practices to protect and improve water quality; 6045 less cases of water contamination resulted because people adopted best management practices to protect and improve water quality; and \$118,000 health care costs were avoided through detection and treatment of contaminate water; and \$311,500 in well replacement costs were avoided through best management practices.

Over 50,000 persons were exposed to information concerning water quality through displays, programs and county fairs.

Septic system management and maintenance programs, exhibits, radio questions and answer sessions conducted by agents have reached over 17,000 people.

12 counties reported that 6635 people increased their knowledge and awareness of the need for water quality protection and conservation. \$377,460 has been saved through improved individual water quality, improved residential water quality, decreased use of residential water and decreased use of public water.

48,842 people increased their knowledge and awareness of waste management strategies. \$298,959 was earned by counties and municipalities through selling of recycling materials. \$154,340 costs were avoided by counties and municipalities

through Project HERO.

With over 125 incidents of groundwater contamination and expenses exceeding \$2 million to provide alternate water supplies, Extension coordinated a Groundwater Guardian program through the Quality of National Resources Commission. The program encourages citizen involvement in groundwater protection projects in their communities. The team partnered with local government, determined wellhead protection boundaries for all community wells and surveyed for possible contamination sources. The team's efforts gained the county designation for the second year as a Groundwater Guardian Community at the 1997 National Groundwater Guardian Designation Conference held in 1997.

4-H PROGRAMS IN NORTH CAROLINA

1997 Accomplishments Overview

Celebrating Our Mission

The mission of the 4-H Youth Development Program in North Carolina is to create helping relationships to enable youth to become responsible, productive citizens. Those helping relationships are created through 4-H and in the related missions of 4-H, the North Carolina Cooperative Extension Service, the College of Agriculture and Life Science, and North Carolina State University and North Carolina A&T State University. Celebrating 4-H in North Carolina is a celebration of the youth, families, and communities of our state.

The treasure that is 4-H actively involves youth, adult volunteers, and donor/sponsors in the creation, implementation, and maintenance of educational program designs which celebrate both tradition and innovation. We strive continuously to "make the best better."

Celebrating Tradition and Innovation

4-H programs in 1997 were productive and efficient through both traditional and innovative educational program designs. Each program strives to help young people:

- learn to live
- learn to make a living
- learn to make our communities better
- become lifelong learners

Basic programs respond to innovations found in four related and collaborative

Extension State Major Programs:

- Child Care
- Leadership and Volunteer Development
- Resilient Youth, Families, and Communities
- Youth Development

Participation Demographics

In 1997 a total of 201,898 youth participated in one or more of 4-H's basic programs. Of these 31,756 were active in 1,499 4-H clubs, 98,083 were active in the 3,454 short term or special interest programs. 88,854 youth participated in the 2,975 (K-12) school enrichment programs offered statewide. Another 35,163 young people were involved in 537 after-school child care designs managed by 4-H.

Fifteen thousand nine hundred and sixty-seven kindergarten age youth were active. Every grade is involved including high points at 32,800 third graders and 27,676 fourth graders. 424 post-high school youth were involved. 4-H'ers continue to come from farm: 13,376; small towns: 109,825; big towns: 46,909; suburbs: 7,598; cities: 24,190; to total: 201,898.

Adult volunteers continue to be the heart and legs of 4-H. It would be difficult to estimate the value of the 23,256 adult volunteers involved in 1997. 21,351 of these were direct youth contact volunteers. 421 were master volunteers in support of volunteer skill development. A total of 15,692 volunteers completed structured training to invest in their friendship groups, families, and communities. 4,287 of these volunteers were youth volunteers.

4-H Camping: A Legacy of Excellence

North Carolina's youth and families continue to "Discover the World Through 4-H Camps." Camps and educational center operations continue to grow in celebration of being exemplary units in the certification system managed by the American Camping Association.

Over 3,500 youth "discovered the world" during 20-unit weeks of junior camping and 14 weeks of speciality camps including: Marine Science and Sailing, Cloverbud Camping (ages 6-8), Fur, Fish, and Game Camp, Horsemanship, Shooting Sports, Mountain Biking, Science and Technology, Adventure Camp, and Teen Leadership Opportunity camps.

Our commitment to ongoing facility improvements through collaborations was realized with the construction of "Challenge Cabin" at Sertoma 4-H Center thanks to the North Carolina Bankers' Association, sponsors of "Challenge Camp," for at-risk youth.

Cooperative Extension Major Program Impacts

CEMP 05 - Child Care

The Child Care State Major Program focuses on opportunities which Cooperative Extension has to impact the quality, accessibility, and availability of child care and has two objectives.

Fifty-four counties targeted the first objective: improving the quality of child care. 10,116 child care providers were trained. Of these, 66 were credentialed, and 131 different sites were licensed. The list of collaborators is long and varied. It includes, community colleges, the Department of Human Resources, Head Start, the Red Cross, the North Carolina School-Age Care Coalition, the North Carolina Day Care Association, the Corporation for National Service, public schools, and the Partnership for Children.

More and more agents report that their work is augmented by grant funds. Typical funders include the Appalachian Regional Commission, Child Care and Development Block Grants, CDA funds, Smart Start and AmeriCorps.

The second objective is to increase the accessibility and availability of child care. \$2,563,971 worth of new resources were involved at 77 new centers to expand the number of available child care slots by 1,939. There were 302 collaborations increasing awareness by 3,317 people.

Working to increase availability, Cooperative Extension agents have used a variety of means to achieve their goals. They have used needs assessments to determine the exact locations where child care is most lacking. They have secured funding to address the need, often serving on Smart Start boards - but also helping to write proposals for S.O.S. (Support Our Students) middle school and after school initiatives.

Key elements of this goal include:

- 1) More child care is now offered (early childhood, full summer programs, after school, intersession and in sections of the state formerly underserved),
- 2) Families who were not being served are finding resources through Cooperative Extension, Enhancement (including training) programs for child care professionals are becoming far more available in rural areas.

CEMP 13 - Leadership and Volunteer Development

Thirty-six counties work to accomplish two objectives. Objective one is the development of leadership skills targeting limited resource and other non-traditional audiences. The skills learned help individuals and groups of community leaders work

to identify important issues and solve problems related to those issues in their community and county.

Two thousand nine hundred and forty-one limited resource and non-traditional individuals increased their capacity to provide valuable service to the community (assume some leadership roles in church, school, community, etc., volunteer). \$584,712 dollars were saved by increased involvement in addressing community concerns by limited resource and non-traditional leaders. \$2,756,855 dollars of economic value was invested in community/county for community projects/solving community problems. 104 community organizations were developed to continue resolving community problems.

Objective two is designed to empower volunteers, paid staff, and other professionals to act on a shared vision by empowering individuals in manager roles to accomplish more by sharing leadership. 1,324 volunteer systems were empowered with: an economic value of \$1,730,383 and with value of volunteer hours of \$1,787,020 for \$178,702 hours worked by 15,585 volunteers at \$10.00 per hour.

Many counties are embracing the master volunteer concept to partner with paid staff in teaching other volunteers or helping with various training programs. They are also serving as mentors to new leaders in their program area such as 4-H club leaders.

Many counties are reporting new organizations emerging from their leadership and volunteer development programs. One county cited a renewed 4-H program committee with three focus areas of involvement of the 26 members.

Another area of progress is involvement of volunteer managers who are responsible for programs. Nash County has an exemplary program to involve senior citizens with day care centers and other youth programs.

Youth at Risk

The Youth-at-Risk Initiative was designed to develop support systems for youth who live in environments which may hinder or prevent them from becoming competent, coping, and contributing members of society.

The North Carolina Cooperative Extension Service, through 4-H, has provided leadership in building coalitions and designing educational programs for youth in high-risk environments. During the past six years, more than 700 coalitions worked to address youth-at-risk issues. Approximately 351 long-term coalitions worked to accomplish the long-range goals. More than 21,511 volunteers donated over 48,446 days to the Youth-At-Risk Initiative. Over \$4,398,352 of federal, \$3,769,968 of state, \$222,959 of local government, and \$453,211 of private dollars were used to support youth-at-risk programs.

Over 2,960 adjudicated youths have reduced their involvement in the judicial system. Nearly 42,300 youth improved their academic performance as a result of Extension programs. Nearly 8,400 youth decreased their alcohol and other drug usage after participating in Extension programs. Career training and preparation have been provided to over 40,250 youth. Over 2,200 science and technology programs have been conducted. Nearly 6,700 youth improved their literacy skills as a result of Cooperative Extension Programs.

CEMP 19 - Resilient Youth, Families and Communities

The "Resilient Youth, Families, and Communities State Major Program" of the North Carolina Cooperative Extension Service takes action to strengthen the resiliency of youth, families, and communities. Resiliency is the ability to cultivate strengths to positively meet challenges. The program focuses on prevention programming which strengthens "protective factors" and reduces "risk factors." Participants bring together and involve educators, researchers, agency and organizational personnel, youth, families, and communities, advocates, and practitioners who share an interest in strengthening the resiliency of North Carolina's youth, families, and communities.

Objective one states: youth in high-risk environments will participate in community based programs resulting in youth acquiring coping skills, making informed decisions, and developing a sense of purpose and future.

Forty-six counties report 19,894 youth with: increased communicating, decision making, working in groups, understanding self, and relating to significant adult life skills; 5,214 with increased literacy; 6,530 with increased community involvement; and 13,128 with increased knowledge and awareness of alternatives to drugs and alcohol use.

Ten thousand five hundred and eighty-six demonstrated increased life skills; 5,341 improved academic performance; 1,416 reduced use of drugs and alcohol; 631 reduced judicial involvement; 655 reduced incidence of violence.

Objective two states: Families will participate in educational experiences enabling them to identify problems, determine solutions, and develop skills to cope with adverse family situations.

Nineteen counties report 822 family money management plans made, while 4,078 increased communication skills, and 3,606 increased coping and nurturing practices for a savings of 13,207 through effective money management. 4,043 participants reduced conflict through improved family and interpersonal communication.

Objective three states: community groups will take action to strengthen communities by creating environments which reduce youth and family risks through collaborative intervention and prevention programs in high risk communities.

Twenty-three counties reported: 432 collaborations established; 103 prevention programs developed; 229 reductions in criminal activity in targeted communities; 64 economic and community development programs established; 85 support programs established for families (i.e. child care, counseling, etc.); 5,750 increasing knowledge and skills among participants about community collaboration and prevention programs.

CEMP 20 - Youth Development

North Carolina 4-H focuses on life skills taught through a broad spectrum of subject matters. Life skills are defined as abilities, knowledge, attitudes and behavior that must be learned for success and happiness. Life skills enable people to adapt to and manage their life situations. They give individuals a frame of reference for perceiving and responding to life situations and enabling them to achieve an inner satisfaction and happiness (National 4-H Curriculum Manual for Youth K-3, 1994).

Objective one states: Long term support systems will develop competent youth in the following life skill areas: 1.) managing relationships; 2.) decision making; 3.) communications; 4.) serving the community.

Impacts are measured in dollars to benefit youth. 81 counties reported: \$429,605 dollars saved by the community from 4-H Community Service Projects; \$374,224 scholarship dollars received by 4-H'ers; \$603,957 dollars earned by 4-H'ers as a result of their 4-H project work; \$257,998 dollars saved by 4-H'ers as a result of their project work.

Life skills provide a measure of increased competency in youth as illustrated by the following areas: 36,005 managing relationships; 34,815 communication skills; 36,042 making decisions; and 39,211 self-confidence.

Objective two states youth involved in targeted knowledge transfer development activities will demonstrate improved academic performance. 61 counties reported the following impacts as reported by their teachers using 4-H school enrichment materials:

Seventy-one percent of the 39,449 students demonstrated some change or a great change in their class attendance. 70% of the 29,327 students reported some or a great change in homework completed. 65% of the 29,235 students demonstrated some or a great change in the quality of their homework. 77% of the 37,221 students demonstrated some or a great change in their science grades.

Additionally, 4-H school enrichment teachers estimated a savings of \$485,545 to school systems. And, 4,218 volunteers worked 70,971 hours which could be valued at \$709,710.

Objective four states limited income youth residing in Diverse/Public Housing will increase life skills development which will ultimately result in making informed decisions about life choices to manage life situations and transitions. (Saying "no" to

peer pressure without guilt, defining and establishing aspirations, communicating feelings, pregnancy prevention, agricultural health and safety, conflict resolution, and understanding consequences of one's actions are some of the life skills that will be addressed.)

Thirty counties reported: 1,400 youth improving their resistance to peer pressure; 797 youths defining aspirations; and 1,346 youths (5-8) increasing competency within the environment as related to play, clothing, the outdoors, bug out, community, safety, grooming and the other relevant topics.

Forty-one thousand four hundred dollars was saved as a result of community service. 475 volunteers donated 9,231 hours valued at \$93,310.

4-H Summary

The North Carolina 4-H Program created helping relationships to enable youth to become responsible, productive citizens during the 1997 programming year. The youth, families, and communities of North Carolina were well served by the mission accomplishment of 4-H through the related missions of the North Carolina Cooperative Extension Service, the College of Agricultural and Life Sciences, North Carolina State University, and North Carolina A&T State University.

1997 proved to be a great year of productive traditional and innovative programs focusing on four of Extension's major state programs: Child Care; Leadership and Volunteer Development; Resilient Youth, Families and Communities; and Youth Development. A total of 201,898 youth and 23,256 adult volunteers worked to involve 31,756 youth in 1,499 4-H Clubs; 98,083 youth in 3,454 special interest programs; 88,854 youth in 2,975 (K-12) school enrichment designs; and 35,163 young people in 537 after-school, child care settings. Over 3,500 youth "discovered the world" during 20 unit weeks of junior camping and 14 weeks of 4-H specialty camps.

Fifty-four counties targeted child care to train 10,116 child care providers and license 131 different sites. \$2,563,971 in new resources was invested at 77 new centers to expand available child care slots by 1,939.

Thirty-six counties worked to expand Leadership and Volunteer Development by involving 2,941 limited resource participants toward more valuable services for their community with a value of \$2,756,835.

Forty-six counties focused on Youth at Risk and Resilient Youth, Families and communities. In Youth at Risk efforts, over 2,960 adjudicated youth reduced their involvement with the judicial system while 42,300 youth improved academic performance. More than 21,511 volunteers worked over 48,446 days during the past five years.

Resilience programs report 10,586 youth with increased life skills; 5,341 improved academic performance, 1,416 reduced drug and alcohol use, 631 reduced judicial involvement, and 655 reduced violence. 432 collaborations were established; and 103 prevention programs were developed.

Eighty-one counties targeted youth development and increased life skills in 146,073 youth while investing \$1,665,784 in community savings, youth scholarships, project work earnings, and project work savings. Studies of representative 4-H school enrichment programs indicated that 71% of the 39,449 students improved attendance; 70% of 29,327 students improved completing homework; and 77% of 37,221 students received better science grades. Teachers reported these results plus savings of \$485,545 to school systems, and 70,971 volunteer hours from 4,218 volunteers valued at \$709,710.

North Carolina's 4-H Program is a treasure shared by our state's youth, families, and communities. It demonstrates the value of collaborating effort and fiscal efficiency in the spirit of locally based, educational design. Youth, parents, educators, community, and regional and state leaders work to create the treasure that is 4-H. In 1997, that treasure blazed brightly across the state of North Carolina.

NC COOPERATIVE EXTENSION PROGRAM VOLUNTEERS 1997

CEMP #		Hours	\$ Value
1-1	546	2857	28570
1-2	449	2251	22510
1-3	162	812	8120
1-4	73	469	4690
<u>1-5</u>	<u>179</u>	<u>1083</u>	<u>10830</u>
	1409	7472	74720
2-1	121	1463	14630
2-2	34	28	280
<u>2-3</u>	<u>0</u>	<u>0</u>	<u>0</u>
	155	1491	14910
3-1	562	3466	34660
3-2	415	3952	39520
3-3	222	2339	23390
3-4	207	1291	12910
3-5	753	10524	105240
3-6	592	3754	37540
<u>3-7</u>	<u>2518</u>	<u>3208</u>	<u>32080</u>
	5269	28534	285340
4-1	2210	18435	184350
<u>4-2</u>	<u>659</u>	<u>3478</u>	<u>34780</u>
	2869	21913	219130
5-1	1540	24751	247510
<u>5-2</u>	<u>655</u>	<u>12579</u>	<u>125790</u>
	2195	37330	373300

6-1	998	5491	54910
6-2	31	354	3540
6-3	969	3173	31730
<u>6-4</u>	<u>106</u>	<u>2464</u>	<u>24640</u>
	2104	11482	114820
7-1	321	2238	22380
7-2	203	2831	28310
7-3	812	6629	66290
7-4	243	1450	14500
7-5	170	1206	12060
7-6	168	1170	11700
<u>7-7</u>	<u>163</u>	<u>1739</u>	<u>17390</u>
	2080	17263	172630
8-1	246	1028	1028
8-2	363	1710	17100
8-3	145	1337	13370
8-4	574	4628	4628
<u>8-5</u>	<u>247</u>	<u>2623</u>	<u>26230</u>
	1821	11326	11326
9-1	648	4065	40650
9-2	151	398	3980
9-3	453	2103	21030
<u>9-4</u>	<u>166</u>	<u>895</u>	<u>8950</u>
	1418	7461	74610
10-1	0	0	0
10-2	50	2000	20000
<u>10-3</u>	<u>0</u>	<u>0</u>	<u>0</u>
	50	2000	20000
11-1	654	5322	53220
<u>11-2</u>	<u>0</u>	<u>0</u>	<u>0</u>
	654	5322	53220

12-1	906	6181	61810
12-2	232	2316	23160
12-3	197	1124	11240
<u>12-4</u>	<u>397</u>	<u>4301</u>	<u>43010</u>
	1732	13922	139220
13-1	2412	20770	207700
13-2	13678	160034	1600340
<u>13-3</u>	<u>4363</u>	<u>30603</u>	<u>306030</u>
	20453	211407	2114070
14-1	135	495	4950
<u>14-2</u>	<u>147</u>	<u>1042</u>	<u>10420</u>
	282	1537	15370
15-1	684	3306	33060
15-2	216	2141	21410
15-3	161	2087	20870
15-4	15	350	3500
<u>15-5</u>	<u>3</u>	<u>50</u>	<u>500</u>
	1079	7934	79340
16-1	2075	16469	164690
16-2	987	6748	67480
16-3	368	1856	18560
<u>16-4</u>	<u>1475</u>	<u>17201</u>	<u>172010</u>
	4905	42274	422740
17-1	802	16571	165710
17-2	1771	37051	370510
<u>17-3</u>	<u>702</u>	<u>5441</u>	<u>54410</u>
	3275	59063	590630
18-1	509	2103	21030
18-2	18	225	2250
18-3	813	2645	26450

<u>18-4</u>	<u>799</u>	<u>2231</u>	<u>22310</u>
	2139	7204	72040
19-1	4125	23212	232120
19-2	542	3395	3395
<u>19-3</u>	<u>1377</u>	<u>16872</u>	<u>168720</u>
	6044	43479	434790
20-1	13742	170076	170076
20-2	3850	68606	686060
<u>20-4</u>	<u>381</u>	<u>5761</u>	<u>5761</u>
	17973	244443	2444430

TOTAL VOLUNTEERS
77906

HOURS
782857

\$VALUE
7,828,570