

1992-1995

PLANS OF WORK

SUMMARY

Leadership Provided by
the ANR/CRD Office

Billy E. Caldwell
Roger G. Crickenberger
Michael P. Levi

August 1991

I. HIGHLIGHTS OF THE NATIONAL INITIATIVES IN NORTH CAROLINA

06 Rural Revitalization

Just less than half of North Carolina's population lives in non-metropolitan counties. That percentage is decreasing and numerous studies indicate that although the quality of life in some rural communities in the state is excellent, an increasing number are struggling to maintain the status quo. In general, the gap between income, education, human services and infrastructure in rural and urban areas is growing. The Rural Revitalization initiative will address this issue in terms of both economic and human resource development. Programs will focus on increasing leadership and problem solving skills among all rural citizens; assisting communities to analyze their economic base and infrastructure, and implement strategic planning; and enabling current and potential entrepreneurs to make more informed business decisions and increase the profitability of their operations. Program development and delivery will be in cooperation with federal and state organizations involved in rural development and will draw upon expertise in the total university and community college system. It is expected that the programs will result in an expanded leadership base in rural communities; increased small and natural resource based business activity; and more communities conducting strategic planning with broad community involvement.

07 Sustainable Agriculture

Interest in concepts such as sustainable agriculture, alternative agriculture, organic farming, and low input sustainable agriculture has increased considerably in the last two years among farm and non-farm groups. The Sustainable Agriculture initiative provides Extension an opportunity to focus on-going programs on sustainability, defined as farming systems which are economically viable, socially acceptable, and environmentally preserving or enhancing. Thus, emphasis will shift from the farm as a production unit to a more holistic approach. Programs will focus on encouraging the use of an integrated, interdisciplinary systems approach to the development of sustainable agriculture programs; and fostering cooperation and coordination among public and private research and extension organizations in the development of sustainable agriculture systems. It is expected that the programs will result in significant reductions in the amount of agrichemicals used (pesticides and nutrients); improved management and utilization of animal wastes; increased use of crop rotations; and expanded adoption of land stewardship practices.

08 Waste Management

Widespread public concern about the volume, inconvenience, and economic, environmental and health impacts of waste coupled with federal and state legislation mandating improved management of solid waste has resulted in a waste management crisis in many North Carolina counties and communities. The Waste Management initiative will provide local governments and the general public with a clearer understanding of the reasons why solid waste management is an important issue, and the options available to meet federal and state regulations. The issue involves human behavior, public policy education, technology and economics. Programs will focus on increasing the capacity of

community decision-makers to analyze solid waste management options, encouraging consumers to make purchasing decisions consistent with environmental responsibility, expanding local recycling and composting programs, and targeting 10-12 year-olds with information on waste management options. It is expected that the programs will result in more informed local decision-making on waste management options including landfill siting and regional cooperation; a significant reduction in the production of waste materials and their disposal in landfills; and a new awareness among youth of the importance of waste reduction.

08b Water Quality

Sediment, nutrients, pesticides and pathogenic organisms from agricultural activities are reported to impact negatively about 20 percent of the surface waters in the state. About half of the state's people rely on ground water for drinking. There are concerns about the quality of this water, particularly in areas with shallow wells. Ground and surface water quality is impacted by a variety of other non-point sources of pollution including underground storage tanks, urban development, home and garden pesticides, septic systems as well as by point sources of pollution. The Water Quality initiative will address concerns about the quality of ground and surface water, particularly where it is used for drinking. Programs will focus on reducing water degradation caused by movement of plant nutrients, pesticides and animal wastes from farms; improving private domestic well protection and water quality; and expanding awareness among public officials and the general public of policy options available to protect water quality. Cooperation with USDA and other federal, state and local agencies and organizations will facilitate program development and delivery. It is expected that the programs will result in the maintenance or improvement of surface and ground water quality, and more informed local decision-making on policy options available to protect water quality.

II. HIGHLIGHTS OF STATE INITIATIVES

02 The Environment and Conservation of North Carolina's Natural Resources

North Carolina's natural resources are important for the well being of its citizens in terms of personal, community, and economic health. Issues facing North Carolinians include global climate change, the protection of endangered species, protection and management of wetlands, deteriorating air and water quality, and conflicts between the use and enhancement of wildlife populations and habitat and production agriculture and forestry. In addition, as the state becomes increasingly urbanized, misconceptions and conflicts arise over what are appropriate and scientifically-based conservation practices. The Environment and Conservation of Natural Resources initiative will provide research based information to enable decision-makers, landowners and the general public to make more informed decisions on natural resource conservation issues. It will attempt to achieve a sustainable environment balancing production and conservation objectives. Programs will focus on increasing public officials' knowledge of natural resource issues and sources of professional assistance; increasing young people's awareness of the

environment and the impacts of human activities; enhancing the land and forest stewardship ethic among landowners; and expanding management practices designed to protect wetlands, endangered species and wildlife habitat. It is expected that programs will result in more informed decision-making on environmental issues, greater concern for the conservation rather than preservation of natural resources, and the enhanced protection and management of wetlands, endangered species and wildlife habitat.

III HIGHLIGHTS OF THE 3(d) AND OTHER SPECIAL FEDERAL FUNDS IN NORTH CAROLINA

23. Farm Safety

Agricultural workers have a higher rate of on-the-job injuries than the total working population. In 1988 there were 48 farm-related fatalities in North Carolina, with one-third involving farm machinery. Many factors--diversified livestock and crops production; numerous part-time or temporary farm workers, including many who do not speak English; reliance on agricultural machinery--contribute to make agricultural workers vulnerable to injury and or death. The Farm Safety program focuses on increasing the awareness of farm workers and their families of safe farming practices; reducing the incidence of injuries, fatalities and occupational illnesses among agricultural workers; and training workers, and rescue and medical personnel to use appropriate injury prevention and accident responses. Implementation will involve training of extension, medical and health professionals, preparation and distribution of educational materials, and meetings and demonstrations. The program is expected to increase the awareness of agricultural workers of the potential for injury, death and illness in the work place and of appropriate prevention and intervention strategies, and to ultimately reduce injuries, deaths and illnesses related to agricultural activities.

24. Small and Part-Time Farm Programs

Nearly 47,000 small farms exist in North Carolina. These operations are characterized by having little working capital, lacking diversity, and often involving one or more family members working off the farm. Many small farmers are not reached by traditional extension programs; thus, they often do not use recommended production and marketing practices. To increase farm income, small farmers need to know the principles of managing and utilizing existing farm resources, the potential for diversification, marketing techniques, land stewardship, proper use of nutrients and chemicals and farm business management. Maintaining resources, such as land, is another critical need. The program will focus on educating small farmers about government program benefits, farm business management, diversification, profitable marketing techniques, land retention, and application of known technology. Results will involve small and limited resource farmers increasing their managerial and production skills, improving profits and maintaining sustainable operations with respect to the environment, the community and the family.

21 Integrated Pest Management (IPM)

IPM has been a part of North Carolina's extension program for 20 years. Public interest in the concept has grown rapidly as sustainable agriculture has achieved acceptance among both farm and nonfarm groups. The challenge facing extension in the next four years is to show producers that IPM as a part of a sustainable production system can reduce pesticide use while maintaining or increasing profits. Extension programs will focus on increasing the use by farmers and urban audiences of recommended IPM practices which involve alternatives to chemical pest controls; increasing private crop consultants, crop scouts, agrichemical dealers, pest control operators and poultry industry fieldmen knowledge of IPM; and expanding the adoption of pest control methods which reduce negative impacts on wildlife. It is expected that the programs will result in decreased use of pesticides by farmers and urban audiences, and a reduction in the impact of pesticides on water quality and wildlife.

20 Pesticide Applicator Training

North Carolina was one of the first states to conduct a pesticide education program. Currently approximately 30,000 farmers and 7,000 commercial pesticide applicators and dealers are licensed in North Carolina to handle restricted-use pesticides. The program is conducted in cooperation with the North Carolina Department of Agriculture. Extension programs will continue to focus on improving the knowledge and attitudes of pesticide applicators and increasing the adoption of safe, environmentally sound pesticide practices. Increased emphasis will be placed on raising the public's awareness of the need for pesticides (man-made and naturally occurring) and the importance of using them safely and conservatively. Farmers, dealers and applicators will be educated about the importance of proper pesticide and container disposal. It is expected that the programs will result in a reduction in the health and environmental impacts associated with the misuse of pesticides.

22 Pesticide Impact Assessment

The North Carolina Pesticide Impact Assessment Program is a part of a national effort to provide the most objective accurate data available for defining and evaluating benefits and risks of selected pesticide active ingredients having critical agricultural and forestry uses. These data is used by EPA in evaluating benefits during the re-registration of pesticides. The information is also of value to the North Carolina Cooperative Extension Service in determining use/benefits of pesticides in North Carolina as they relate to issues such as water quality. In addition to maintaining continued linkage with the national program, emphasis will be given to providing support to the National Initiatives, Food Safety and Quality, Water Quality, Sustainable Agriculture and Water Quality.

25 Renewable Resources Extension Act (RREA)

North Carolina's forestlands and wildlife habitat make substantial

contributions to both the state's economic well being and environmental quality. Three-quarters of the forestland is owned by approximately 250,000 private non-industrial landowners. Over 3,000 industries in the state use wood as their raw material. Many rural communities depend increasingly on small renewable resource-based businesses including tourism, hunting leases, pine straw and Christmas trees. At the same time there is increasing public concern about the management of renewable resources and its impact on environmental quality. Extension programs will continue to enhance the profitability and production efficiency of renewable resources enterprises but will place more emphasis on maintaining or improving the environment. There will be greater focus on increasing decision-makers' and the public's (including youth) understanding of renewable resource issues; and providing continuing education for renewable resource professionals. It is expected that the programs will result in improved multiple-use forest and wildlife management, more competitive renewable resource based enterprises, and more informed decisions on renewable resource policy issues.

IV HIGHLIGHTS OF STATE CORE PROGRAMS

10 Farm Business Management

There are approximately 60,000 census defined farmers in North Carolina with only 25,700 generating sales of \$10,000 or more and only 8,100 having sales of 100,000 or more. Investments continue to increase as the trend toward fewer and larger farms continue and as competition among farmers heightens. The economic area in which farmers must compete is global in nature and is complicated by the maze of international policies, domestic food and agriculture, environmental regulations, income and estate tax laws, and labor rules and regulations. The increase in vertical integration in poultry and swine changes the farmers approach to management. To assist farmers in coping with this complex situation additional emphasis will be given to assisting farmers in analyzing alternative enterprises and new technologies, plan and manage the personnel, financial, and production aspects of their business. The impact of environmental rules and regulations on management and profitability and special record keeping requirements also assist farmers in gaining understanding of complex national and international policies. Legal and personnel management issues related to farm management and the environment will be a key program element.

11 Livestock Production, Processing and Marketing

North Carolina's beef, dairy, swine and horse industries generate \$1.2 billion annually. The producers represent a diverse clientele for extension--small part-time, contract, large independent and large commercial and integrated producers. While traditional nutrition, reproduction, management and marketing program emphases will continue to be important,

emerging issues will gain more attention in the coming years. These include manure management and utilization; a safe, healthy meat and milk supply; the impact of animal agriculture on the environment; animal care issues; biotechnological advances; and consumer acceptable of animal products. Educational programs will be modified to incorporate these concepts. Delivery methods will incorporate interdisciplinary or integrated management systems approaches to livestock production and will rely increasingly on cooperative efforts among departments, agencies, industry groups and consumer and public interest groups. The program is expected to enhance the production and economic efficiency of livestock enterprises, but at the same time minimize any detrimental environmental impacts and maintain a safe food supply that is in demand by the public.

12 Poultry Production, Processing and Marketing

North Carolina is first among the states in production of turkeys, fourth in young chickens, seventh in eggs, and second in ducks. The expansion of these industries into national leaders has been closely associated with the development of vertical integration and contract growers. Traditional educational needs, dealing with production efficiency and profitability, will continue. However, several emerging issues are and will impact the future of poultry production and marketing. These include: farm business and investment management, manure and mortality management and utilization, food safety, animal welfare, youth programs, and consumer education. Programming to meet the traditional and emerging educational needs will employ on-farm demonstrations, conferences, agent and integrator fieldman training, grower meetings, publications and audio-visual materials. These delivery methods will be complemented with computer and other electronic media. In addition, programming efforts will emphasize the significance of interdepartmental, interagency and interdisciplinary approaches. The Poultry Production, Processing and Marketing program is expected to increase the knowledge and application of known production, processing and marketing technology by the poultry industry to improve production and income; to ensure safe poultry products in the food chain; to implement environmentally sound management practices; and to sustain poultry production as a viable source of income and as a way of life.

13 Aquaculture and Commercial Fisheries Production, Processing and Marketing

North Carolina's aquaculture industry produces trout, catfish, hybrid striped bass, crawfish, crabs and marine shellfish. Wild fish stocks support major commercial and recreational fisheries of significant importance to the coastal economy. Profitability and expansion in commercial aquaculture have been limited by poor production and business management, high initial investment, market limitations, water quality, waste management, and lack of adequate production technology. For example, currently no therapeutic drugs are registered by FDA for hybrid striped bass. Furthermore, water quality and harvesting pressures have reduced stocks of major coastal and estuarine species. These declines reduce economic benefits to fishermen, tourists, and coastal communities. They also create conflict between recreational and commercial fishermen. The safety of seafood and aquaculture products is an

issue of key public concern. The program will focus on these high priority needs of the aquaculture and commercial fisheries industries, through conferences, publications, audio-visual materials, interagency cooperation, and training in HACCP concepts. The expected results are to enhance the profitability of seafood and aquaculture products, while at the same time doing so in a manner that is sustainable in the environment and produces safe food products.

14 Field Crop Production, Processing and Marketing

In 1990, North Carolina farmers received over one and one half billion dollars from the production of traditional field crops. These crops were planted on almost four million acres. Forages, pastures and turfgrass add another three million acres. Recently, corn and soybean acreage has declined while cotton acreage has increased dramatically. Profitability of most of the grain crops has been marginal except for those growers that produce and market efficiently. Utilization of turf for aesthetic and recreational purposes continues to increase. There are increasing concerns on the impact of crop aquaculture on the environment especially water quality. For producers to be competitive they must adopt a comprehensive approach to production and marketing. In addition producers must consider the environmental and social impact of their production systems. In this 4-year plan, the extension program will address issues such as comprehensive nutrient and soil management. Growers will be assisted in developing and implementing a comprehensive marketing plan and adopting economically sound production practices. To address the issues facing crop producers will require greater emphasis on cross commodity/discipline extension-research teams to develop and deliver scientifically based environmentally and economically sound crop production systems.

15 Horticultural Crops Production, Processing and Marketing

Horticulture in North Carolina is diverse and dynamic. Horticultural crops are grown commercially in all 100 counties. Over forty vegetable crops, six fruit crops and hundreds of ornamental crops are grown with a total of more than \$500 million in farmgate value. Improvement of quality and maintaining that quality with improvement in production practices and post-harvest handling are top priorities in this long range plan. Incorporation of state of the art irrigation practices, plasticulture, and more efficient soil and nutrient management will be necessary to remain competitive. Diversification and production of specialty crops for niche markets will be additional priorities. Growers will need to become more efficient by improving pest control while reducing the use of pesticides by utilizing the latest advancements in IPM, sustainable agriculture, cultural and biological control techniques. Processors of horticultural crops, will be assisted in developing the skills to identify and address critical environmental priorities related to post-harvest, handling, processing and distribution. Issues of pesticides, food safety, and ground water contamination will require new expertise and greater emphasis on cross commodity/discipline extension-research teams to develop and deliver scientifically based environmentally and economically sound horticultural production systems.

16 Urban Horticulture, Forestry, and Pest Management

North Carolina is shifting from a predominantly rural to an urban state. In addition the population is increasing rapidly. This creates a growing demand on extension for urban horticulture, forestry and pest management information. Greater emphasis will be placed on providing information to urban resident, developing cooperative relationships with the N. C. Division of Forest Resources and Urban Forestry Council, and expanding the number of volunteers participating in Master Volunteer programs. The programs will focus on increasing home gardeners' knowledge about landscaping, pest management and garden and turf related subjects, with emphasis on minimizing pesticide use and the environmental impacts of management decisions; increasing community association, school group and beautification committee knowledge of urban tree selection and management; and providing continuing education for landscape contractors, designers, maintenance contractors and grounds managers. It is expected that the programs will result in improved environmental quality in urban areas and a reduction in dollar losses associated with improper plant selection, and poor management of urban landscapes.

17 Forest Resources and Wildlife Production, Processing and Marketing

Forest cover 60 percent of the state's land area, three quarters are owned by 1/4 million private landowners, and they provide the resource base for the state's second largest industrial employer with a value of shipments of \$12 billion. In addition, the 2,500 producers in the rapidly growing Christmas tree industry received \$63 million in 1990 and additional income is received by landowners from wildlife leases, fee fishing, pinestraw and mushrooms. Income production from forest resources is facing growing criticism from individuals and groups concerned about management practices and their impacts on the resource and the environment. Extension programs will continue to focus on increasing income for landowners through improved management and marketing of their forest and wildlife resources; increasing the competitiveness of forest products manufacturers through improved processing and management; improving the quality of Christmas trees; and expanding existing, and developing new national and international markets for forest products. Increased emphasis will be placed in these programs on minimizing negative environmental impacts of management practices. It is expected that the programs will result in a sustainable increase in the economic contributions from forest resources and wildlife.

18 Community and Rural Development

Community and rural development programs not a part of the rural revitalization initiative will include a variety of community development, infrastructure, and recreation and tourism development projects. They will focus on supporting existing and new community organizations to implement development and beautification projects; improving water quality, septic system management and solid waste management; and expanding recreational opportunities and tourism income in rural communities. It is expected that the programs will result in greater involvement of citizens in rural community development and an improvement in infrastructure and economic opportunities.

19 Conservation of Natural Resources

Conservation of natural resource programs not a part of the environment and conservation of natural resources initiative will include programs on pond management, multiple use management of private forest land, and outdoor air quality. They will focus on improving pond water quality and fish production through better pond and weed management practices; improving the management of private forests for recreation, water quality, and wildlife in addition to timber production; and increasing the public's awareness of outdoor air quality and the options available for improving it. Youth education will be an important component of each of these programs. It is expected that the programs will result in improvement in the quality of the state's private ponds and forestlands, and an increased awareness of natural resources issues among the public.

V. HIGHLIGHTS OF OTHER FEDERAL INTEREST PROGRAMS

Conservation and Forestry Titles of the 1990 Farm Bill

The 1990 Food, Agriculture, Conservation and Trade Act instituted many new programs for the conservation and improvement of crop and forest land. The bill also strengthened existing soil conservation and wetland preservation programs implemented under the 1985 Farm Bill. Extension will work with other federal and state agencies and private organizations to help agricultural and forestry producers comply with the provisions of the 1985 and 1990 Farm Bills. Extension programs will focus on assisting landowners and managers to understand the Conservation and Forestry Titles of the 1990 Farm Bill and successfully implement conservation plans and practices. It is expected that the programs will result in greater compliance with the bill, and consequently, increased land and forest stewardship, decreased soil erosion from farm and forest lands, and reduced degradation of water quality by agriculture and forestry practices.