

North Carolina Agricultural and Technical State University



Plan of Work FY 2005 - FY 2006

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2-Year Plan of Work FY 2005 – FY 2006

Background

This document outlines the 2-Year Plan of Work for FY 2005 – FY 2006 of North Carolina Agricultural and Technical State University; the Plan expands upon the existing 5-Year Plan with continuing and new efforts. The plan is organized around the five national goals of the Cooperative State Research, Education, and Extension Service (CSREES) and delineates the changes in emphasis to address the key agricultural issues in North Carolina. Table 1 contains the monetary resources projected for each goal over the two-year period.

Overall, the issues driving the changes in the 2-Year Plan of Work are listed below:

- *Movement away from tobacco as the primary cash crop to viable sustaining alternatives* (continuing decline of tobacco and the need for profitable alternative crops and efficient production methods)
- *Changes in the population composition and workforce participants* (increases in Hispanics in rural areas and among the agricultural workforce has produced an increasing need and demand for population relevant information on health status and quality of life.)
- *Increasing recognition of the value and benefits of alternative medicine alternatives* (nutriceuticals and functional foods as medical alternatives)
- *Changes in rural economies and communities* (economically stressed communities need research-based leadership training and database development to support community issues)

The following strategies permeate the 2-Year Plan of Work and have been refined and expanded to address the agricultural issues in North Carolina:

1. *Increased interaction between research and Extension.* The School of Agriculture and Environmental Sciences has implemented a strategic plan to enhance collaboration between research and Extension. This collaboration is essential to assure involvement of Extension in not only clarifying agricultural issues but also in being a partner for the delivery and use of information on completion of the research project. Specific strategies to achieve this include a required Extension component/collaboration in all Evans-Allen proposals and split appointments between research and Extension.

2. *Expanded partnerships and leveraging of research funds.* The School of Agriculture and Environmental Sciences actively pursues collaborative relationships with industry and national and community agencies, and other institutions of higher learning to ensure maximum impact of its research projects in terms of both application of findings and attraction of funding to support the progress and accomplishments of the research program.
3. *Selection of six program initiatives.* The School of Agriculture and Environmental Sciences is developing a signature research, teaching and cooperative extension program reflected in six broad-based program initiatives. The six program initiatives are: (1) Human and Community Development, (2) Biotechnology and Biodiversity, (3) Agromedicine, Nutrition and Food Safety, (4) Soil and Water Quality, (5) Small Scale Agriculture, and (6) International Trade and Development. These initiatives build on the strengths in the School of Agriculture and Environmental Sciences and align with the five CSREES goals. The Initiatives also support the primary themes of the vision of NC A&T State University. Specifically, 2-Year Plan of Work supports the key themes of interdisciplinary programs and centers, strategic partnerships, and enhanced diversified resources.

Addressing National Goals

Goal 1: An agricultural system that is highly competitive in the global economy

The 2-Year Plan of Work continues to assist farmers in marketing products profitably in the state and beyond. A major emphasis is expanding export opportunities for North Carolina agricultural products especially for the pork and wine industries. In addition, research continues to seek and refine productive uses of agricultural by-products, including peanut shells and cheese whey, that can turn “waste” into value-added products.

Change in Emphasis: An intensified effort of the 2-Year Plan of Work focuses on the existing Key Theme of Small Farm Viability and especially on the needs of North Carolina tobacco farmers who are challenged by the continuing decline of the tobacco industry.

Key Theme of Small Farm Viability

A major thrust of the agricultural research program is to work in tandem with Extension to locate and determine the marketing parameters of alternatives to tobacco farming. Small farmers are particularly affected by the tobacco decline and are the primary focus of the research/Extension efforts. The focus is to assist tobacco farmers in transitioning from growing tobacco to the production and successful marketing of niche and alternative products such as upscale pork, exotic mushrooms, wine vineyards, and cut flowers. Also,

attention will focus on opportunities for value-added agriculture especially on using swine waste for energy resources.

Specific Projects

Research projects that are addressing the development of alternatives for small tobacco farmers are the following:

- Genetic Models for Upscale Pork Markets; Applications for Small Scale Hog Producers
- Improving *Grifola Frondosa* for High Yields and Medicinal Values
- Use of Tobacco Transplant Greenhouses for Specialty Cut Flower Production
- An Initiative for Specialty Crop Production and Marketing Research for Small Farmers

Indicators of Impact

Indicators of impact for the research program include the number of farmers who add these targeted alternatives to supplement their farm product revenues, seek development of one or more of these alternatives as their primary source of farm income, or remain in farming as a result of adopting these alternatives. Another indicator is the level of income that is achieved through the production of one or more of these alternatives. One additional indicator is the extent of interest and demand for technical training in the production of these alternatives as well as their marketing and development as a sustaining income product.

Goal 2: A safe and secure food and fiber system

The 2-Year Plan of Work continues the research in the areas of the Key Themes of Food borne Illness, Food borne Pathogen Protection, and Food Safety.

Goal 3: A healthy, well-nourished population

Many chronic diseases including heart disease, stroke, hypertension, diabetes and some forms of cancer, are related to nutritional factors. The prevalence of some of these chronic conditions is higher among certain ethnic minority groups. Several demographic and nutrition-related shifts are occurring in North Carolina and the nation. One is the increased rate of growth of the Hispanic population in the nation and particularly in the state. Another change in society is increased attention being given to functional foods and nutraceuticals as ways to address the health of the population.

Addition of Key Themes

To develop the research program's capacity to contribute to the health and welfare of North Carolina and the nation, several additions are being made in the 2-Year Plan of Work. The Key Themes of Medicinal Plants and Nutraceuticals are included.

Key Theme of Medicinal Plants and Key Theme of Nutricueticals

Specifically, researchers are studying the following: evaluating the health effect of phytochemicals in green tea, black seeds, garlic and mushroom, use of probiotics in dairy and non dairy products, development of health-promoting food using food industry by-products, use of alternative and complementary medicine among the Hispanic population in North Carolina, and utilization of natural dietary supplements to control pathogenic bacteria in poultry and to enhance meat safety.

The specific research studies addressing these issues are the following:

- Functional Food Ingredients from Select North Carolina Agricultural By-Products
- Evaluation of Selected Plant Extracts as Potential Food Preservatives and Anticarcinogens
- Dietary Intake, Body Mass Index and Use of Alternative Medicine Among Hispanics
- Novel Approach to Produce Lactose Free Dairy Products

Indicators of Impact

Indicators of impact include identification of naturally occurring substances and compounds in plants that have positive health benefits that have potential for development as development as functional food, food supplements, and antimicrobial agents.

Goal 4: Greater harmony between agriculture and the environment

The focus on wetland restoration and protection as a key theme continues in the 2-Year Plan of Work. Also, there is a joining of efforts between research and Extension in using findings from previous research on tillage and soil quality in a systematic way to encourage and instruct farmers adopt and use improved soil management practices.

Goal 5: Enhanced economic opportunity and quality of life for Americans

Rural communities in North Carolina are suffering economically from loss of jobs resulting from the decline of major industries including tobacco, textiles, and furniture. The challenge is to provide support to the infrastructure so that communities will be able to address the negative consequences of these changes and find other sources of income and employment. Additions to the 2-Year Plan of Work include three key themes.

Key Theme of Leadership Training Development

A study focuses on identifying the impact of Community Voices Program (a Cooperative Extension Program) on leadership development and involvement in rural communities.

Key Theme of Promoting Housing Programs

Sales of manufactured housing continue to be strong in North Carolina with the state being second in the nation in manufactured home sales. These homes provide affordable housing to over 15% of the state population that is concentrated in the rural communities. However, the cost of utilities in these new homes can be high due to energy inefficient features of some homes and to related difficulties in the home set-up and installation. An understudied issue is the achievement of problem resolution for new owners of manufactured homes when problems with installation and repair are spread across different responsible parties.

Key Theme of Impact of Change on Rural Communities

A continuing concern in rural communities is the loss of land used for agricultural purposes. The impact of this change and the factors associated with the change are under study.

The specific research projects to address these concerns are the following:

- Factors Influencing Leadership Development and Community Involvement in Limited Resource Communities
- Manufactured Housing as a Product and Process for Improving Quality and Cost-Efficient Housing in Rural North Carolina
- An Economic Assessment of Farmland Loss in North Carolina
- Assessment of Community Based Organizations in Black Belt States

Indicators of Impact:

Indicators of impact include the strengthening of leadership training and development in rural areas through enhanced curriculum and expanded availability, the improvement in the problem resolution of concerns in manufactured housing that can be addressed satisfactorily before becoming cases before the NC Department of Insurance hearing body, use of information about eliminating negative consequences of land lost from agricultural uses, and improved communication among and development of community based organizations.

Stakeholder Input Process

There are no changes in the existing plan.

Table 1: Projected Expenditure of Evans-Allen funds and State-Matching Funds by National Goal

Goal 1: *An agricultural system that is highly competitive in the global economy*

Fiscal

Year	Federal \$	State \$	Other \$
2005	1,065,451	634,608	37,688
2006	1,131,711	749,631	37,688

Research SY's

Year	Total
2005	11
2006	11

Goal 2: *A safe and secure food and fiber system*

Fiscal

Year	Federal \$	State \$	Other \$
2005	217,502	193,313	5,384
2006	233,586	228,351	5,384

Research SY's

Year	Total
2005	2
2006	2

Goal 3: *A healthy, well-nourished population*

Fiscal

Year	Federal \$	State \$	Other \$
2005	582,903	241,567	0
2006	611,943	285,351	0

Research SY's

Year	Total
2005	5
2006	5

Goal 4: *Greater harmony between agriculture and the environment*

Fiscal

Year	Federal \$	State \$	Other \$
2005	688,772	1,126,361	31,928
2006	693,801	1,330,515	31,928

Research SY's

Year	Total
2005	5
2006	5

Goal 5: *Enhanced economic opportunity and quality of life for Americans*

Fiscal

Year	Federal \$	State \$	Other \$
2005	592,792	322,086	0
2006	633,748	380,464	0

Research SY's

Year	Total
2005	3
2006	3