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COLLEGE OF ENGINEERING SCIENCES,
TECHNOLOGY AND AGRICULTURE

OFFICE OF THE DEAN

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July 13, 1999

Dr. George Cooper
Deputy Administrator
USDA-CSREES
800 9th St., SW, Suite 4605
Water Front Center
Washington, D.C. 20024

Dear Dr. Cooper,

Enclosed please find the 5-year Plan of Work for the Land-Grant Programs at Florida A&M University.

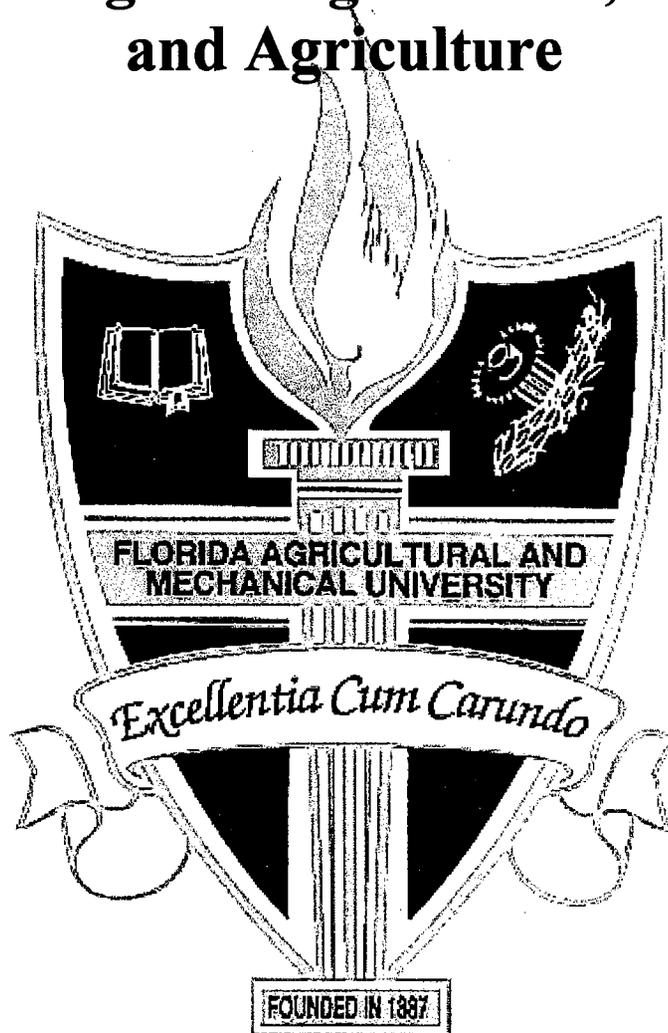
If there are any questions, please feel free to contact me.

Sincerely,

Bobby R. Phills
Bobby R. Phills
Dean and Director

Enclosure

Florida A&M University
**College of Engineering Sciences, Technology
and Agriculture**



**1890 Land-Grant Institution
Plan of Work
(10/1/99 - 9/30/2004)**

Submitted by,

Bobby R. Phills

Bobby R. Phills
Dean and Director

July 13, 1999

College of Engineering Sciences, Technology and Agriculture

FLORIDA A&M UNIVERSITY

1890 LAND-GRANT INSTITUTION PLAN OF WORK (10/1/99 - 9/30/2004)

Florida A&M University, an 1890 Land Grant Institution, receives Federal research and extension formula funds under sections 1444 (1890 Extension) and 1445 (1890 Research) of the National Agriculture Research, Extension, and Teaching Policy Act of 1977 as amended.

Sections 202 and 225 of the Agricultural Research Extension, and education Reform Act of 1998 require Florida A&M University to prepare, submit and have approved a Plan of Work (POW) to receive its formula funds for research and extension programs.

To meet the requirements of this congressional legislation, Florida A&M University is submitting a joint POW for the Research and Extension Programs. A brief description of the Teaching and the International Program is also included.

Stakeholder Input

In this section, we report the actions taken to seek stakeholder input from persons who either conduct or use agricultural research, extension or education as it relates to the use of USDA/CSREES formula funds. Also, a description of the processes used by Florida A&M University to develop the programs targeted to address the critical issues of the State of Florida is included.

Stakeholder input was sought at several different levels. These included: small farmers; agricultural commodity producers; agricultural industry; consumers, environmental groups;

private foundations; Florida Department of Agriculture; county extension workers; Federal, State and local agencies; and faculty, staff and students at the University. Special effort was made to include minority stakeholders.

The stakeholders were identified as follows:

1. Research, Teaching and Extension Program Advisory Committees for the College were asked to nominate at least two representatives in each of the program areas.
2. The faculty and staff were asked to identify those individuals or organizations who use Florida A&M's land-grant programs.
3. County extension agents and commodity groups were asked to identify those individuals who benefit from FAMU's programs.
4. Water Management Districts, Mosquito Control Districts and the State Agriculture Department were asked to provide input into the planning process.
5. Industry input was sought through the "Industry Cluster" group and representation of agribusiness companies on the College advisory council.
6. Input from faculty, staff and students was received by holding listening sessions and town-hall meetings.

Based on the inputs from the groups mentioned above, a list of potential stakeholders representing a diversified audience was developed. A letter was sent to stakeholders from the Dean and Director of Land-grant Programs inviting them to the campus to participate in a daylong listening session. Additional meetings were held with various advisory groups at different locations within the State. At these sessions, the Dean, three Associate Deans (Academics, Research and Extension) and the Director of International Agriculture Program made presentations on the current programs at the University and their impact on the clientele followed by discussion and identification of critical issues.

Stakeholders were asked the following questions:

1. How do the current FAMU land-grant programs impact stakeholders?

2. Do these programs benefit them? If not, what changes should be made?
3. What are the critical issues and problems in the food and agriculture arena in the State of Florida?
4. How can FAMU address these problems?
5. How can stakeholders help FAMU in garnering additional resources to address these problems?

Following the listening sessions with stakeholders, faculty, staff and students, a college-wide external advisory council of stakeholders was formed. During the stakeholder listening sessions, two recorders captured the issues and concerns raised by the group. Further discussions were held to address the identified issues.

The critical issues identified by the stakeholders were as follows:

1. Quality and quantity of water available to consumers within the State of Florida
 - Better management of animal waste to reduce water pollution (intermediate term)
 - Reduction in nitrate pollution (intermediate term)
 - Preservation of water resources (long term)
 - Testing of rural drinking water (short term)
 - Educational program related to water quality (long term)
2. Need for preservation and enhancement of small farms, rural families and small agribusiness enterprises in Florida
 - Development of database on small farmers (short term)
 - Identification of alternate crops (intermediate term)
 - Development of value-added farm and food products (long term)
 - Financial management and decision-making for small farms (intermediate term)
 - Community resource development (long term)
 - Preparing Florida's youth for the world of work (long term)
 - Caring families and communities for youth (long term)
 - Educational programs addressing needs of small/minority farmers (long term)
3. Need for the development of a viable grape industry in the State of Florida and increased involvement of small farmers in producing and marketing of grapes and small fruits
 - Increase in total grape acreage (long term)
 - Development and release of new and improved grape cultivars (long term)
 - Identification and control of major diseases and insect pests affecting the grape crop in Florida (long term)

- Development of a marketing strategy for grapes and grape products (short term)
 - Development of value-added products (intermediate term)
 - Educational programs and training opportunities for grape growers (long term)
4. Need for the development of a viable and profitable goat industry in Florida
 - Marketing issues related to goats and goat products (intermediate term)
 - Development of herd health management practices (short term)
 - Development of efficient production/management systems (intermediate term)
 - Development of value-added products (long term)
 - Educational and outreach programs to enhance goat enterprises (long term)
 5. Need for reductions in use of pesticides to control insects and weeds
 - Identification of biological control agents (long term)
 - Development of crop specific strategies to control insects and weeds through biological control (long term)
 - Identification and testing of biological control agents for vegetables crops in North Florida (intermediate term)
 - Controlling aquatic weeds in freshwater bodies of the State (long term)
 - Development of educational programs to reduce use of pesticides (short term)
 6. Identify health and nutritional needs of special groups such as youth, minorities, elderly and rural citizens and provide food safety information to consumers
 - Establishment of nutritional needs for various groups (intermediate term)
 - Determination of food habits of various groups and recommend ways to improve dietary intake (short term)
 - Development of educational and outreach programs to inform the general public about food safety issues (long term)
 7. Support state-funded mosquito control program (long term)

Based on stakeholder inputs, a tentative Five-Year Plan of Work for land-grant programs at FAMU was prepared and sent to the members of the external advisory council for their review and comments. The plan was modified accordingly and it is now being submitted to CSREES for further review and approval.

There are two specific examples that demonstrate that stakeholder input was considered in developing the Plan of Work.

1. Florida grape growers identified several problems that have adversely affected the Viticulture industry in the State. These include: Lack of suitable grape cultivars (which are resistant to major pests and diseases in Florida) for fresh fruit, wines and value-added

products; Lack of information on vineyard management practices and insufficient extension and outreach service to grape growers. They would like for Florida A&M University to take leadership in this area and help in developing Florida's grape industry. The State of Florida currently funds our research and extension activities in viticulture. However, additional resources are needed to address the problems identified by the stakeholders. Therefore, we included viticulture research and extension activities in our 5-year program plan and developed a joint effort with the State Department of Agriculture to enhance the grape industry in the State. Part of the formula funds and the matching dollars provided to FAMU will be used to conduct research and extension activities in viticulture.

2. The future of the goat industry in Florida depends on the profitability and sustainability of meat goat enterprise. Both research and extension programs at FAMU have been extensively involved in developing the meat goat industry within the State. However, several problems remain and the Florida Goat Producers Association through its advisory committee asked FAMU to undertake a joint research and extension program to address the following issues: Identification and development of market for goats; Information on nutrition and management of goat herds; Herd-health management practices; and processing of value-added products. In response to stakeholders' needs, a Statewide Goat Program has been established at FAMU. This program will help in coordinating all activities and entities within the State. The stakeholders (in this case Florida Goat Producers) will benefit from the inclusion of this program in the 5-Year Plan of Work.

Merit and Peer Review

Florida A&M University plans to conduct extensive review of its research, teaching and extension programs prior to submission to CSREES for approval and implementation. An instrument will be developed to ensure inputs from the user groups and stakeholders to initiate projects and formulate a POW that will address the state's critical needs. The merit and peer review will be conducted as follows:

1. Internal review of programs by a committee of peer faculty.
2. External review by experts in the subject matter area.
3. Review by selected members of Stakeholder Advisory Committee.
4. Land-grant Program review by CSREES, every five years.

Planned Programs

Florida is one of the fastest growing states within the United States, currently ranking fourth in population growth after California, New York, and Texas. By the year 2005, Florida will be the largest state with an approximate population of 17 million. Most of this growth will be in the major urban areas of the state. However, agriculture in the rural sectors will continue to play a vital role in Florida's economic stability. Agriculture in Florida is diverse as well as unique in nature in terms of farm size, crops and economic investments. It represents a complex group of industries that produce a wide variety of food crops, livestock, vegetables, fruits, ornamental horticulture, forestry, aquaculture, and related agricultural industries. Florida's agriculture is a major contributor to the food supply of both the state and the nation and it is an important source of employment opportunities, economic stability and sustainable growth. The total revenue generated by the state agricultural industry exceeds six billion dollars per year.

The changing demographics of the state and the consequent needs of our clientele dictate that we develop research, extension and educational programs that foster new businesses and jobs in rural as well as urban areas, promote innovative technologies, enhance workforce diversity, improve the quality of life and provide adequate public service. The challenge is not to duplicate existing programs, but to develop direct program interventions that are proactive, promote employment and generate income for all persons in rural and urban areas.

The research base of Florida's agriculture is rapidly changing. Previous research within the college focused mainly on obtaining high yields with little regard to the control of input levels. This occurred because of the relatively low cost for land, water, fuel, chemicals, and capital inputs. The cost of these inputs has risen substantially, and environmental concerns

require that innovative and sustainable production technologies be adopted to keep Florida's agricultural industry competitive and profitable.

The Extension Program will critically assess the needs of small farmers, processors, agribusiness entrepreneurs and other high technology end-users. Special attention will be given to rural and urban residents in the north Florida Panhandle to assist them in identifying and developing community priorities, targeting self-help programs and modifying and adopting technology transfer information delivery systems to ensure the sustained and enhanced growth of these communities and their residents.

Based on the inputs received from the stakeholders and to address the critical needs of the State, the following 'Plan of Work' is being submitted for the CSREES/USDA formula funded programs in research and extension at Florida A&M University.

Program Plan

Goal 1: An Agricultural Production System that is Highly Competitive in the Global Economy.

Program Area 1: Viticulture and Small Fruit Research

Statement of Issue

The Florida Legislature identified viticulture as an underdeveloped industry with great economic potential. The grape industry in Florida has been hampered by the fruit quality from the currently available commercial varieties. There is a need to improve the quality of grapes in terms of disease and pest resistance, seedlessness and development of fresh as well as wine grapes. There are currently 8 wineries and several fruit processing plants in Florida that can greatly benefit from new cultivars as well as new value-added products. There is much interest in the state in growing grapes; however, a concentrated outreach effort is lacking. Florida A&M

University and the Florida Viticulture Advisory Council have been working together to address several of these critical issues.

Performance Goals

- Reduce production costs
- Develop new and improved grape cultivars
- Strive to transfer the technology from any successful efforts to the marketplace for the purpose of providing employment, rural development, and improving the profitability of grape producers in the State of Florida
- Assess the potential benefits of identifying value-added uses for grapes
- Increase business profitability through improved cultural techniques and use of adapted grape cultivars
- Increase the quality and percentage of marketable products per acre
- Improve the harmony between horticultural practices and the environment
- Increase the quality of experiential learning opportunities for undergraduate students and masters thesis opportunities for graduate students

Output Indicators

Extension

- Number of individual consultations
- Number of group learning experiences
- Number of producers who plan to adopt one or more recommended practices
- Number of producers who actually adopt one or more recommended practices
- Number of educational material prepared
- Number of undergraduates participating in experiential learning opportunities

Research

- Better adapted fruit cultivars
- Greater understanding of how to quantify the benefit of adding value to grape commodities and by-products
- Key community development groups, industries, and state agencies that show interest using technology to start new companies or expand existing operations
- More efficient cultural practices
- Greater understanding of the ripening and senescence processes
- Enhance graduate research in grapes and small fruits

Outcome Indicators

- Greater profitability and competitiveness
- Increased value of grape commodities
- Improved cooperation between the industry, state and federal agencies, industry and communities to transfer technology that will lead to industrial growth and rural development that is beneficial to Florida agriculture.
- Increased acreage of grapes for fresh fruit and processing

- Increased value of under-valued by-products from producers and processors that will lead to improved land management.
- More use of experiential learning opportunities for undergraduate training

Key Program Components

- Improve the production efficiency and increase the competitiveness of the Florida grape industry through the increased use of adaptive cultivars tolerant to abiotic and biotic stresses.
- Study the economic impact of adding value to grapes on producers, processors and communities.
- Transfer the technology from the laboratory research to private industry.
- Improve production management and marketing practices.
- Develop efficient and sustainable practices that ensure ecosystems integrity and enhance the quality of water, soil and air resources.

Internal and External Linkages

- Multi-state – Arkansas, Mississippi, Georgia, California, Washington, DC, Florida.
- Multi-institutional – Universities of Arkansas, Mississippi State, Georgia, California at Davis
- Multi Discipline – Horticulture, Agricultural Economics, Food Science, Plant Pathology

Target Audiences

- Florida grape growers
- Florida meat & dairy goat farmers
- Small farmers
- Food processors
- Wine makers
- Consumers
- Students

Evaluation Framework

The program will be evaluated annually on the basis of progress made towards the projected goals. An interim annual report will be required. Based on the program achieved, the projected time-line and plan of work may be revised to accommodate any changes in goal, resource allocation and target audience. The final report, at the completion of the proposed goals, will cover the progress made during the life of the program and significant achievements and shortcomings will be discussed. An impact statement will be prepared and evaluated by the stakeholders.

Program Duration

Long-term (1999-2004)

Allocated Resources

The Viticulture Program receives an annual appropriation from the Florida Legislature. Additionally, federal formula funds and the state matching funds will be allocated to the program. Projections include 3 faculty FTEs, 1 full-time technician and temporary field assistants. Funds will be provided to conduct field and laboratory research and extension activities.

Education and Outreach Program

- Training meetings
- Field days and workshops
- Method and result demonstrations
- Seminars and conference

Program Area 2: Statewide Goat Program**Statement of Issue**

County data estimated that there were 34,920 goats in Florida in 1998. This figure represents 54.6 percent increase in goats over 1992. The raising of goats, as an alternative enterprise in farming systems can provide a profitable and sustainable source of income for small-scale farmers in Florida's rural communities. However, production cost, the production of a superior meat and dairy type goat, herd health and marketing have been determined to be limiting factors in Florida's goat industry.

The future of the goat industry in Florida depends on the profitability and sustainability of meat goat enterprises. Research, education and extension, to improve the competitive position of small goat producers, in an increasingly concentrated market is essential. Alternative marketing tools and new market outlets are needed to keep producers competitive in the

livestock industry. Production technologies and management systems appropriate for goat producers are needed to identify and enhance the competitive position of goat producers.

It has been determined that the goat industry cannot grow or expect to become stable and profitable unless there are major reductions in production cost. There is a need to fully utilize the natural resources available to agriculture, including the integration of goat enterprises into farming systems that are primarily devoted to the production of crops. It is also essential to assess the nutritional value of various feeds available to goats, such as forages, crop residues, agro-industrial by-products (AIBP) and other non-conventional feeds. These feeds could be used to develop economic diets which will be essential in reducing the cost of supplemental or grain feeding.

Parasitism in goats has a significant impact on the economic returns in a goat enterprise, especially in intensive management systems. Understanding the epidemiology of different strains of parasitic worms in goats will allow for better control, through the selection of anthelmintics that work. The integration of drugs with grazing/pasture management, to minimize transmission of infection will reduce health-related costs. Therefore, an epidemiological study of the prevalence of anthelmintic resistance to the major parasites of goats is needed.

Production and marketing are not independent decisions and information on both is needed to identify market development opportunities. Also, all of the marketing functions confronting meat product need to be studied to identify problems and challenges which may affect expansion of the meat goat industry. Therefore it is important that farm marketing studies be coordinated and linked with goat production studies. This includes: grading and standards, transportation, distribution, processing technologies, etc. Increased efficiency may depend on

improved technology at any or all stages of the marketing system. Institutional problems, including government regulations, are a part of this overall marketing function.

Performance Goals:

- Improve experimental learning opportunities for undergraduate and graduate students in small ruminant production, including meat and dairy goats
- Reduce production costs for feed and drugs
- Improve alternative marketing techniques
- Improve the quality of marketable goat products include value-added products
- Increase the quality of experiential learning opportunities for undergraduate students and master thesis opportunities for graduate students

Output Indicators

Extension

- Number of extension personnel completing non-formal education program on sustainable goat production practices
- Number of persons who plan to recommend one or more sustainable goat production practices
- Number of persons who actually recommend one or more sustainable goat production practices
- Number of producers/farmers completing non-formal education programs on sustainable agriculture production practices
- Number of producers who plan to adopt one or more recommended practices
- Number of producers who actually adopt one or more recommended practices
- Number of undergraduates participating in experiential learning opportunities

Research

- Use of economic/low-cost feeding programs by utilizing pastures, torbs, browse, crop residues and crop by-products
- Production practice options for reducing the over-reliance on drugs
- Greater understanding of marketing infrastructure and cooperatives
- More use of superior types of goats for meat as well as dairy purposes
- Value-added products to enhance marketability
- Better quality of graduate students

Outcome Indicators

- More use of sustainable production practices
- Reduction in feed and health costs
- Enhanced marketable products and markets
- Greater profitability and competitiveness
- More use of experiential learning opportunities for undergraduate training

Key Program Components

- Improve the production efficiency and increase the competitiveness of the Florida goat industry through the reduction of feed and health cost
- Improved marketing practices by acquiring an A-class slaughtering and processing facility which we provide small farmers with a comparative advantage in livestock production and capitalize on the substantial window of opportunity that is opening for them
- Develop value-added products e.g. sausages and snack sticks
- Develop producer cooperatives

Internal and External Linkages

- Multi-State – Natural Resources Conservation Service (NRCS), Farm Service Agency (FSA), Department of Agriculture – Georgia, Alabama, Carolina, Texas, Louisiana and Tennessee
- Multi-Institutional – a) University of Florida – IFAS (Departments of Meat Science, and Food and Resource Economics, b) Universities of Fort Valley, Tuskegee, Alabama A&M, North Carolina A&T, South Carolina, Tennessee State, North Carolina State
- Multi-Discipline – a) Food and Meat Scientists Specialist and Veterinarian

Target Audiences

Small farmers (Meat and dairy goat producers)

Processors

Wholesalers

Consumers

Retailers

Extension Personnel

Rural Development Personnel

Organizations

Students

Evaluation Framework

- Statewide goat program faculty will keep records of the number of target audiences who have completed formal and non-formal educational programs on sustainable goat production practices. Also, faculty will keep records of extension personnel who plan to recommend or who actually recommend sustainable goat production practices. Faculty will implement conduct a mini survey to find out on a yearly basis which farmers were recommended for sustainable goat production practices by county extension staff.
- Three methods will be used to collect data on adoption of practices. The first is that extension agents will keep data on the number of farmers completing non-formal programs on sustainable goat production practices. Second, is a measure of adoption of sustainable goat production practices by producers/farmers as a direct result of extension efforts. These adoption figures will be obtained directly from county extension personnel who will maintain records of producers/farmers of adopting sustainable goat production practices. Also, a survey will be conducted of an appropriate sample of goat producers by personnel interviews. In all cases, a statistically valed random sample of producers stratified by size will be selected. All surveys will focus on three primary areas: marketing, production/nutrition and health.

Program Duration

Long-term (1999-2004)

Allocated Resources

The Statewide Goat Program is a joint program between research and extension. Funds will be allocated according to the needs of the program in each one of these areas. Both Evans-Allen funds and Cooperative Extension formula funds will be appropriated. In addition, the State Matching Dollars will be provided to cover expenses. Faculty and staff FTEs include: 2.5 faculty and 2 staff in research and extension programs.

Education and Outreached Programs

- Informal classes
- Training meetings
- Field days and workshops
- Method and result demonstrations
- Seminars and conferences
- Publications
- Video tapes and slide sets

Program Area 3: Profitability of small-scale crop production in Florida**Statement of Issue**

Increasing cost of purchased inputs and low market returns are serious profitability constraints facing the Florida small-crop producer. For example, in the three north Florida counties (Gadsden, Jackson and Jefferson) where over 65% of the farmers are small-scale producers, input cost expenses for fertilizers, pesticides, and other petroleum-based products recently amounted to approximately \$17,750,000. Many small-scale farmers cannot support the household, thus forcing family members to seek off-farm income.

Practices to reflect environmental awareness and stewardship become additional factors which confront the small-scale farmer.

Small-scale farm profitability may be improved with diversification in cropping systems and adoption of cost-effective alternative production practices. Selection among these alternatives should be confined to those enterprises which allow the farmer to carryout environmentally sound activities.

Performance Goals

- Reduce production costs
- Improve the harmony between crop practices and the environment
- Increase business profitability through improved cultural techniques and use of adapted crop (vegetable) cultivars
- Increase the quality and percentage marketable product per acre
- Increase the quality of experiential learning opportunities for undergraduate students and masters thesis opportunities for graduate students

Output Indicators

Extension

- Number of group learning experiences
- Number participating in group learning experiences
- Number of individual consultations
- Number of educational materials prepared
- Number of undergraduates participating in experiential learning opportunities

Research

- Production practice options for reducing the over-reliance on chemicals
- More efficient cultural practices
- Better adapted vegetable and grain cultivars
- Enhance graduate research

Outcome Indicators

- More rational/efficient use of agricultural chemicals by producers
- Greater profitability and competitiveness
- More use of experiential learning opportunities for undergraduate training

Key Program Components

- Develop efficient and sustainable practices that ensure ecosystem integrity and enhance the quality of water, soil, and air resources
- Improve production management practices
- Improve the production efficiency and increase the competitiveness of Florida's crop industry through the increase use of adaptive cultivars tolerant to abiotic and biotic stresses

Internal and External Linkages

Multi-State: Alabama, Georgia, Mississippi

Multi-Institutional: University of Florida, Alabama A&M University, Fort Valley State University

Multidiscipline: Agricultural Economics, Agronomy, Horticulture, Environmental Science

Target Audiences

- Small-scale crop producers in north Florida counties
- Students

Evaluation Framework

- Determine the number of farmers using new practice/enterprise
- Evaluate the profitability of the new practice versus the old being replaced

Program Duration

Long-term (1999-2004)

Allocated Resources

Improving profitability of small-scale crop production system in Florida is an important component of both Research and Extension Programs. The economics and profitability is built into each of the project to enhance returns for small-scale producers. Research and Extension efforts in this case area will be supported by Evans-Allen Funds, Extension Formula Funds and, partly by the State Matching Funds. Human resources allocated to this program include three faculty and three Agricultural Program Assistants. Other expenses will be covered through the programs mentioned above.

Education and Outreach Programs

- Training meetings
- Field days and workshops
- Method and result demonstrations
- Seminars and conferences

Goal 2: A Safe and Secure Food and Fiber System**Program Area 4: Biological Control****Statement of Issue:**

Florida has a warm humid climate, a diversity of natural ecosystems, and is one of the leading agricultural states. As a result, it is particularly vulnerable to wide variety of insect pests and weeds. Rising public concern about food safety and environmental quality has left many of those responsible for controlling such pests with a severe pesticide crisis. While effective pest control is critical in most agricultural/horticultural systems, it is becoming increasingly clear that excessive reliance on chemical pesticides can be costly, can result in primary and secondary pest outbreaks triggered by the development of resistance and the destruction of beneficial natural enemies, and can lead to serious pollution problems. The cost of developing new, more selective and environmentally friendly pesticides is often prohibitive. Therefore, the need to adopt sustainable, less pesticide intensive pest control practices is clear.

Biological control, or the control of pest species using natural enemies, is a prime component of sustainable agriculture. Examples of biological control include the importation and establishment of exotic natural enemies, the mass release of natural enemies as "bio-pesticides", and the conservation and enhancement of existing natural enemies. To fully realize the potential of biological control, proper identification of the taxa involved, as well as a sound understanding of how beneficial and pest species interact in the environment, are needed. Such information is necessary to integrate biological control into agricultural production, or into more general pest control systems.

To this end, the FAMU program for Biological Control will seek to provide a unique service in teaching, research, and community outreach in four broad areas relating to biological

control – 1) Insect Taxonomy, 2) Mosquitoes and other Biting Flies, 3) Vegetable Insect Pests, and 4) Invasive Alien Species.

Performance Goals

- Increase undergraduate enrollment in entomology courses by 5%
- Develop a graduate program in biological control
- Recruit and/or train three graduate students in biological control annually
- Conduct taxonomic studies on insect species and groups of importance to biological control
- Develop and transfer biological control technologies to growers and the community for selected insect pests and weeds
- Establish international projects in biological control with foreign counterparts
- Increase the quality of experiential learning opportunities for undergraduate students and masters thesis opportunities for graduate students

Output Indicators

Extension

- Number of consultations
- Number of group learning experiences
- Number participating in group learning experiences
- Number of educational materials prepared
- Number of undergraduate participating in experiential learning opportunities

Research

- More efficient control measures
- Control practice options for reducing pest species over the reliance on pesticides
- Better control of pest species using natural enemies
- Evidence of population reductions in target pests
- Greater understanding of how beneficial and pest species interact in the environment
- Increase in student admission and graduation
- Better quality of graduate students

Outcome Indicators

- More efficient production and greater profitability
- Reduction in pest species
- More rational/efficient use of agricultural chemicals by producers
- More use of experiential learning opportunities for undergraduate training

Key Program Components

- Teaching – curriculum development, seminars, and supervision of graduate student research
- Taxonomy – e.g., taxonomic studies of weevils in support of biological control
- Biting Flies – e.g., biological control of aquatic weeds to assist control of mosquito infestations

- Arthropod Pest Vegetable Crops – e.g., biological control of thrips and the impact of habitat management on pest populations in vegetable crops
- Invasive Alien Species – e.g., classical and augmentative biological control of exotic tephritid fruit flies

Internal and External Linkages

- Multi-state – Moscamos Program, Guatemala, USDA-ARS, Georgia
- Multi-Institutional – University of Florida, University of Puerto Rico, US Army Corps of Engineers, Hefty Methods Station, Guatemala
- Multidiscipline – USDA-APHIS, USDA-ARS, Dept of Agriculture and Consumer Services, Division of Plant Industry

Target Audiences

Citizens of Florida, the U.S. and the Caribbean Basin

Small and Large-scale Farmers

Extension Personnel

Scientists

Citrus Industry

Water Management Districts

Students

Evaluation Framework

- Reduction of target pests to levels...
- Below economic or aesthetic injury;
- Which allow native plants to reestablish; and/or
- Which significantly reduce their risk of being introduced into the U.S.

Program Duration

Long-term (1999-2004)

Allocated Resources

The Biological Control Program will receive funds from the formula funds as well as from state matching funds. Other resources include partial support from ARS and APHIS. Faculty and staff FTE includes: 2 faculty and one laboratory technician. Post-doctoral research associates and USDA personnel participating in this program are supported by funds other than CSREES. Adequate resources in expenses and need equipment will be made available.

Educational and Outreach Programs

- Training meetings
- Seminars and conferences
- Field days and workshops

Goal 3: Improving Human Foods: Functionality, Selection and Nutrition**Program Area 5: Nutrition, Diet and Health in Florida****Statement of Issue**

Nutrient intakes influence the development and sustainability of optimal health, infant and maternal well-being, and physical fitness. A better understanding of diet and health relationships not only contributes to improved quality of life and increased productivity but also guides adjustments in the food production system and reduces health care costs.

Infant mortality continues to be a problem in the United States, with low birth weight being a major determinant. Poor nutrition among expectant mothers is a major factor contributing to this problem. High-risk populations include women in limited-resource households, the minority population, and those people with less than high school education.

In North Florida the nutrition and health of families is being influenced by limited resources, financial instability, an increase in the number of female headed households with low incomes, a high rate of illiteracy, and a lack of information regarding basic nutrition and health principles. Also, the nutritional needs of pregnant teens and pregnant females with limited resources are of great concern since they are at greater risk of having low birth weight infants than females of higher socio-economic status. The nutritional needs of older adults are also of great concern since they may also have limited resources with which to make food related decisions.

Comprehensive preventive education is needed, particularly for limited resource audiences, for pregnant women, families with children under the age of 6 and for older adults.

Performance Goals

- Improve our understanding of the principles of ingredients and flavor of foods
- Improve our understanding of dietary and feeding choices
- Develop strategies for effective nutrition education
- Determine optimal dietary intakes for health maintenance and disease prevention
- Develop novel foods and food ingredients that will help prevent human diseases and improve quality of life
- Increase our understanding of human nutritional needs
- Increase the quality of experiential learning opportunities for undergraduate students and masters thesis opportunities for graduate students

Output Indicators

Extension

- Number of Group Learning Experiences
- Number participating in Group Learning Experiences
- Number of Educational Materials Prepared
- Number of participants who increase their knowledge of nutrition, diet and health principles
- Number of the target audiences who adopt beneficial nutritional and health practices
- Number of undergraduates participating in experiential learning opportunities

Research

- Greater understanding of food components as they influence food properties and nutritional value
- Improved strategies for providing foods of today's lifestyle to the consumer
- Increased availability and consumption of health promoting foods by people
- Assistance to food companies in developing profitable foods that will improve human well-being
- Better quality of graduate students

Outcome Indicators:

- Improved nutritional status of people
- Increase in the availability of health promoting foods for consumers
- Increase in the public's awareness of health promoting dietary and feeding behaviors
- More use of experiential learning opportunities for undergraduate training

Key Program Components

- Research the educational programs that will effectively inform and fully educate people about all the related issues of food and nutrition
- Investigate the impact of social and economic factors on food choices
- Study dietary and feeding habits associated with optimal growth
- Research mechanisms of dietary prevention of disease
- Study the impact of food constituents on chronic disease indices

Internal and External Linkages

- Multi-State: Georgia, Alabama, Louisiana, Mississippi
- Multi-Institutional: University of Florida – IFAS, Fort Valley State University
- Multi-Discipline: Pharmacy, Nursing, Allied Health

Target Audiences

- Single Female Headed Households
- Pregnant Teens
- Homemakers with Limited Resources
- Youth
- Older Adults
- Students

Evaluation Framework

- Determination of the number of the target audiences who have adopted beneficial nutritional and health practices.
- Determination of the knowledge of nutrition diet and health principles gained.

Program Duration

Long-term (1999-2004)

Allocated Resources

Florida A&M University plans to redirect some of its resources to build programs in health, nutrition and food safety. Projections include: 3 faculty FTEs, 2 staff members and a program budget to cover laboratory and field research and extension efforts. The Nutrition, Diet and Health Program area will receive federal and state matching funds to conduct workshops, conferences and distance learning seminars.

Educational and Outreach Programs

- Training Meetings
- Short Courses
- Videos and Slide Sets
- Seminars and Conferences
- Workshops

Goal 4: An Agricultural System that Protects Natural Resources and the Environment

Program Area 6: Water Quality and the Environment

Statement Issues

One of the most pressing national priorities is the protection and improvement of our water resources. This is especially true in Florida where approximately one-third of land forms are wetlands and the drinking water is mostly drawn from shallow underground aquifers. Agricultural and other hazardous chemicals, urban storm water runoff, and erosion sedimentation all find their way into surface and groundwater, causing both point and nonpoint sources of pollution.

Florida's increasing population (now 13 million) continues to put a high demand on the state's water resources. In 1990, for example, some 7,530 million gallons of fresh water were withdrawn daily for domestic and other uses. Approximately 63% of this were groundwater.

Simultaneously, due to poor soil fertility and high incidence of insects and pathogens, farmers, industrialists, and homeowners continue to apply pesticides and fertilizers to their crops, lawns, and gardens in order to guarantee high yields and enhance aesthetic quality.

In fact, according to the *Florida Statistical Abstracts* 1992, during this period of July 1990 to June 1991, over 1,976,734 tons of fertilizers (10% of which was nitrogen and phosphates) were applied to crops and landscapes in the state by large and small-scale farmers and homeowners.

It is routine for small-scale farmers in north Florida, for example, to apply up to 1,00 lbs./acre of inorganic fertilizer to their corn. The high seasonal rainfall occurring in Florida (average 55 inches annually), will readily facilitate leaching and/or runoff of these chemicals,

ingredients of paramount importance to the state's agricultural industry, be used and applied in such manner that they do not become polluting agents of the state's vulnerable water resources.

Florida is one of the fastest growing states in the nation. As the population increases, So will the demands for water supply and wastewater treatment. Agriculture in Florida uses approximately 70 percent of all freshwater consumed within the state. More than one-half of freshwater used in Florida for all purposes come from aquifers. Since most of these aquifers are shallow (only 10-12 feet below the surface in some parts of the state), potential sources of water contamination are many. For example, Florida is ranked second in pesticide application in the nation, but thirty-third in planted acreage. Surface water bodies including lakes, streams, rivers, irrigation canals and wetlands are equally susceptible to pollution by agricultural activities, animal waste disposal, landfill seepage and aquatic weeds. Hence, there is an immediate need for research to improve the understanding of the relationships between agricultural practices, land use, wetlands and water quality.

Performance Goals

- Improve Florida's surface water quality for humans to meet standards required under the Clean Water and Drinking Water Act
- Increasing economic and cultural benefits from societal uses of the water resources
- Investigate the extent and sources of agricultural point and nonpoint pollution of surface and sub-surface water resources and ways to alleviate them
- Increase the quality of experiential learning opportunities for undergraduate students and masters thesis opportunities for graduate students

Output Indicators

Extension

- Number of individual consultations
- Number of group learning experiences
- Number participating in-group learning experiences
- Number of farmers/household adapting water quality practices
- Number of educational materials prepared
- Number of undergraduates participating in experiential learning opportunities

Research

- Greater understanding of the impacts of agriculture land and water use practices
- Environmental assessment data for improved state water quality and resource management programs
- Knowledge required to restore plant communities to riparian zones and hydrologic areas
- Better quality of graduate students

Outcome Indicators

- Adoption of program recommendations for achieving surface water quality improvement
- Revision of state aquatic endangered species management policies based on program inputs
- Reduction in the amount of agriculture and household chemicals in drinking water
- Increased populations of native aquatic biota
- Greater societal recreational and economic benefits from surface water uses
- More use of experiential learning opportunities for undergraduate training

Key Program Components

- Monitor and assess sources of sediment and agricultural and other chemical input into surface waters
- Evaluate impacts of agricultural land and water practices on aquatic environmental quality
- Provide environmental assessment data required for improve state water resources management programs
- Conduct surveys and evaluate status aquatic species
- Determine habitat requirements and population of economically important fishes
- Provide publications and workshops to increase knowledge on water resources by the general public
- Conduct on-site evaluations and make recommendations for management of private ponds relative to water quality, aquatic vegetation, and sport fisheries

Internal and External Linkages

- Multi-state: Agricultural Research Service Southeast Watershed Research Laboratory, Tifton, Georgia, Forest service Center for Forested wetlands research in Charleston, South Carolina: Institute of Food and Agricultural Sciences, University of Florida
- Multi-institutional: University of Florida, University of Georgia
- Multi-discipline: Horticulture, Soil Science, Entomology, Agriculture Engineering, Forestry, and Sociology

Target Audiences

- Undergraduate and Graduate students
- Small farmers
- Private land owners
- Forest land owners
- Rural residents
- Federal and State land managers
- Students

Evaluation Framework

- Survey target audience to determine the number of who requested and use water quality techniques
- Determine if there is a decrease in the contaminant level of previously polluted water resources
- Program effectiveness will consist of evaluation by end users in terms of positive impacts on improvement and preservation of water quality and advancement of public knowledge of factors effecting water quality

Program Duration

Long-term (1999-2004)

Allocated Resources

Research and Extension Programs have several ongoing joint projects in water quality. Faculty and staff from both areas are working together to address some of the critical needs in this program area. Four faculty and three staff members will be employed to undertake the proposed work. Adequate allocation of funds will be made through federal, state and other grant dollars.

Education and Outreach Program

- Training meetings
- Farm and household visits
- Field days and workshops
- Seminars and conferences
- Publications

Program Area 7: Mosquito Control

Statement of Issues

The critical needs of the State of Florida under this program can be summarized as follows:

- Experimentation to determine effective dosage rates, formulations and equipment used in the control of arthropods of public health importance
- Insecticide residue and non-target research in support of public health pesticides
- Research on non-chemical alternatives for public health arthropod control
- Establishment of a statewide mosquito resistance testing program
- Studies on the biology, ecology and effective monitoring of public health arthropods and the diseases they vector

- Provision of technical information, extension publications and assistance on the biology and control of public health arthropods
- Provision of continuing education for public health pesticide applicators and other professionals needing information on arthropods of public health importance
- Acquisition and dissemination of technical information and research findings at national, regional and state entomological conferences

Performance Goals

- Provide field and laboratory experimentation to evaluate 5 new insecticide formulations and/or equipment designs
- Conduct 2 studies to evaluate the effects of mosquitocides on non-target organisms
- Conduct 3 studies to evaluate non-chemical means of mosquito and biting fly control
- Develop a proposal to create and finance a statewide mosquito resistance-testing program
- Initiate 3 studies on the biology, ecology and/or surveillance of mosquitoes, biting flies, midges and/or ticks
- Create 3 extension guides on arthropods of public health importance
- Host a regional training conference consisting of field and laboratory workshops on identification, biology, ecology, surveillance and control of arthropods, wildlife and associated zoonotic diseases of public health importance
- Participate in the Florida Mosquito Control Association, American Mosquito Control Association and Entomological Society of America conferences by providing at least 6 presentations

Key Program Components

- Mosquito Adulticide Research & Extension
- Mosquito Larvicide Research & Extension
- Mosquito Biological & Alternative Control Research & Extension
- Pesticide Environmental Impact Research & Extension
- Biting Fly & Tick Control Research & Extension
- Special Projects Research & Extension
- PHEREC Extension Program

Internal and External Linkages

PHEREC scientists involve engineers, regulatory and industry representatives, as well as national, state and local mosquito control personnel in joint research and extension endeavors. Scientists from academic institutions such as the University of Florida, Auburn University and state agencies such as the Florida Department of Health, Florida Department of Agriculture & Consumer Services are also frequently involved.

Target Audiences

- Mosquito and other arthropod control personnel from special taxing districts, counties and municipalities
- Health agencies
- Agriculture agencies
- Academic organizations
- Television & print media
- Public schools
- Public at large

Evaluation Framework

PHEREC programs are annually evaluated by means of a Research Advisory Council composed of administrators and stakeholders that review the Center's programs and activities. The Center's annual report documents the progress made during the year and sets forth the work plan for the New Year.

Output Indicators

Progress accomplished toward the Center's goals and work plans is quantified in the annual report. This work is qualitatively reviewed through the Center's Research Advisory Council and adjusted as needed to take into account new issues, problems and work proposals.

Outcome Indicators

The Center's accomplishments can be assessed through direct comparison of activities as documented in the annual report with the Center's performance goals.

Program Duration

Five years (1999-2004)

Allocated Resources

This program is fully supported by an annual appropriation from the State of Florida. No additional federal or state matching funds will be allocated.

Goal 5: Enhance Economic Opportunity and Quality of Life for Americans**Program Area 8: Small Farm and Rural Development****Statement of Issue**

Nearly one-fourth of the U.S. population resides in rural areas where the nation's natural resource base is located and where agriculture production occurs. Many rural communities are faced with the challenge of maintaining a viable economic and demographic-based while their agricultural and natural resource-based populations are shrinking. As these communities undergo change, so do the characteristics of their workforce and the opportunities available to it. Existing community services may not be matched to the demand for them, and over time the infrastructure may decline and become obsolete. Often, local leaders who wish to adapt to such change are not aware of economic development strategies or policies that can help them cope.

The well being of American families continue to be a broad national concern. Current economic conditions are contributing to family financial instability and increasing the stress levels associated with limited employment opportunities and fluctuating incomes. The number of young children in poverty has increased over the past decade. Adequate affordable housing is out of reach for many, and poor diets during pregnancy and contributing to low birth weights and infant mortality. These economic and social conditions are contributing to the stress associated with physical and emotional child abuse and other family violence.

In rural areas, changes in the number and types of jobs available affecting families and the ability of communities to provide needed services. As job disruption and/or dislocation occurs, families need assistance in managing stress, generating realistic alternatives and implementing courses of action.

Adequate health care for all citizens has become a major issue within the United States and in the Extension Program target countries. Local communities in less densely populated areas are faced with the dilemma of attracting medical personnel and maintaining facilities in the face of relatively small and declining populated bases. Because professional health care may not be familiar with farm safety, accident prevention, and emergency procedures.

Performance Goals

- Examine the extent to which Florida's rural residents, organizations and communities solve development issues
- Identify educational programs that help local leaders provide essential services, including education, health care, transportation and public safety
- Identify and analyze factors occurring in rural communities that affect the development and stability of families

Output Indicators

Extension

- Number of Individual Consultations
- Number of group learning experiences
- Number participating in group learning experience
- Number of educational materials prepared

Research

- Examine the extent to which North Florida's rural residents, organizations and communities solve development issues
- Identify and estimate the impacts of new agricultural technologies on individuals, farm and business enterprises and communities
- Identify factors occurring in rural communities that affect the development and stability of families
- Determine economic and occupational changes in terms of impacts on human resources and families

Output Indicators

Extension

- Number of individual consultations
- Number of group learning experiences
- Number participating in group learning experiences
- Knowledge, Attitude, Skill and Aspiration (KASA) changes as a result of involvement in group learning experiences

Research

- Information of use to decision-maker at the local level; those initiating development projects; and those setting policies
- Measures of capital-human (skills, health of residents), social community involvement, cooperation among organizations), constructed physical (housing, business facilities, transportation system, public infrastructure), and financial (monetary resources that can be used for human development).

Outcome Indicators

- Changes in employment opportunities, per capital income, proportion in poverty, housing availability, family stress, school drop-out and continuing education values, knowledge gain and educational processes, infant mortality, participation of residents in local events, and quality of water

Key Program Components

- Provide educational programs that help local leaders provide essential services, including education, health care, transportation and public safety
- Develop economic development strategies that emphasize small business development, job retention, human capital development, and leadership
- Provide educational programs that help families cope with economic, occupational and social change

Internal and External Linkages

- Multi-state - Kentucky and Idaho
- Multi-institutional - University of Kentucky, Rural Sociology and Sociology Department
 - Ohio State University, Rural Sociology Department
 - University of Florida, IFAS (Sustainable Agriculture)
- Multi-discipline - Agriculture Environmental Science, Business and Psychology

Target Audiences

- Rural families and residents
- Local leaders
- Small farmers
- Health care providers

Evaluation Framework:

- Determine KASA and practice change among target audience
- Determine end result as a result of KASA and practice change

Program Duration

Long-term (1999-2004)

Allocated Resources

Small farm and rural development is a built-in component of several Research and Extension Projects at Florida A&M University. The resources for this program will be provided through the federal formula funds, state matching funds and other sources. The faculty and staff projections include: 2 faculty FTEs and 2 staff FTEs, along with adequate funds for expenses and needed equipment.

Educational and Outreach Programs

- Training Meetings
- Workshops
- Seminars and Conferences

Program Area 9: Financial Management and Decision-Making in Florida**Statement of Issue**

Economic uncertainty is one of the major problems facing families with limited resources in north Florida. The economic well-being of these families is being affected by changing employment opportunities in the area, declining purchasing power and a lack of knowledge and skill in management of resources. The increase in the number of female-headed households is also of great concern since these families tend to earn less.

Poverty for 1995 is defined as an income of \$15,150 or less for a family of four. The Census Bureau's Annual Poverty Report said that 39.3 million people fell below the poverty level in 1993, pushing the poverty rates to 15.1% of the U.S. population. In Florida, the poverty level rose from 15.7% in 1992 to 17.8% in 1993. Nationwide, children represent 27% of the total population but 40% of the poor. However, if non cash benefits such as food stamps, Medicaid, public housing and other benefits are considered income, the poverty level drops to 12.1%. Poverty is highest among blacks at 33.1%, compared to Hispanics at 30.6%, and whites at 12.2%.

The median income in U.S. households for 1993 was \$31,241, with Asians and Pacific Islanders having the highest median income (\$38,387) followed by whites (\$32,960), Hispanics (\$22,886) and Blacks (\$19,532). On an average, women earn about 73% of the incomes earned by men.

Data from the Consumer Expenditures published by the Bureau of Labor Statistics shows that the largest share of spending was for housing (31.3%), followed by transportation (18.1%), food (15.1%), personal insurance/pensions (9.1%), apparel services (5.7%), health care (5.2%), and all others (15.4%).

Performance Goals

- Understand how family behaviors affect quality of life in the context of existing median income, consumer expenditures and community environments to recommend strategies for improvements – setting of financial goals and developing a household budget.
- Identify the most serious financial problems and monitor their incidence for potential solutions and more effective dissemination of information about best practices for prevention by rural families especially those with female headed households.

Output Indicators

Extension

- Number of Individual Consultations
- Number of Group Learning Experiences
- Number participating in Group Learning Experiences
- Number of Educational Material Prepared
- Number setting financial goals, developing a household budget and sticking to their budgets for a period of time

Research

- Better understanding of the influence of financial management and decision-making on the quality of life

Outcome Indicators

- More use of financial management and decision making plans
- Reduction in debt level
- Increased purchasing power
- Increased knowledge and skills in the management of resources

Key Program Components

- To provide educational programs which will help families and individuals improve their financial stability and position by gaining and maintaining control of their finances, improving their marketplace performance, and managing other resources
- To provide educational programs which will improve the family economic status by reporting a decrease in their debt level
- To provide educational programs that will increase and use family knowledge and skills by applying principles of decision making to the selection of goods and services in the marketplace
- Collaborate closely with state and federal human service agencies

Internal and External Linkages

- Retail Merchants
- Florida Department of Consumer Science
- Local and Federal Regulatory Agencies
- Individuals and Families

Target Audiences

- Persons with limited resources, limited reading skills and money
- Persons with over extended credit, poor management practices, and poor consumer skills
- Female headed households
- Retired employees

Evaluation Framework

Evaluation and measurement of impact accountability activities will be based on data from reports of program activities and on follow-up contacts with clientele. As available data will be obtained on the following end result indicators: number of people making changes in their use of financial resources to adjust to their current economic situation such as decreasing debt level, increasing savings, and making money last from one pay check to the next; increase in level of money management principles, knowledge achieved by youth, and knowledge of consumer rights and responsibilities.

Program Duration

Long-term (1999-2004)

Allocated Resources

The Family Resource Management Program area will receive both federal and state matching funds to conduct family resource management programs for families with limited resources and food stamp recipients. Projected FTEs allocated to this program include 3 faculty positions, 2 Family Resource Management Program Assistants, and consultants to conduct workshops, demonstrations and conferences.

Education and Outreach Programs

- Managing Your Resource Program
- Money Management Skills for the Homeless
- Dealing with Dollars – Intimate Money Management
- Money 2000

Program Area 10: Community Resource Development**Statement of Issue**

North and northwest Florida communities are changing. Individuals and families are increasingly confronting changing social, economic and demographic environments. The quality of life in these communities is jeopardized by lack of affordable housing, community vitality and job opportunities for adults and youth. For many years these communities depended on agriculture as the foundation for economic survival. Agriculture production in these communities has ceased to provide sustained economic well-being and employment opportunities.

Real declines in local, state and federal funding for social welfare programs impede alternative community development programs. Grass-root community organizations must be empowered to generate and manage resources so that they make productive contributions to their communities.

Performance Goals

- Examine the extent to which Florida's community residents and grass-root organizations solve development issues
- Identify how grass-root community organizations assist residents to make economic and social transitions

Output Indicators

Extension

- Number of Individual Consultants
- Number of Group Learning Experiences
- Number participating in Group Learning Experiences
- Number of Educational Materials Prepared

Research

- Amount of money obtained through grants, contributions, and other sources toward community development and local improvement projects
- Information of use to decision makers at local, regional, and state levels; those initiating development projects; and those setting policies
- Number of communities supporting development projects

Outcome Indicators

Changes in employment opportunities, per capita income, number of small businesses started and existing businesses expanded after receiving Extension's assistance and number of local partnerships and/or collaborations formed.

Key Program Components

- Collect, analyze, and disseminate both primary and secondary data

Internal and External Linkages

- Multi-State: Alabama, North and South Carolina, Virginia, Mississippi, Tennessee, and Georgia
- Multi-Institutional: 1890 Land Grant and 1862 Institutions in the Southeast Region
- Multi-Discipline: Agriculture Economics, Small Business Personnel, Rural Sociology, Animal and Crop Sciences

Target Audiences

- Community Residents
- Members and Officers of Grass-Root Level Organizations
- Youth and Youth Mentors
- Community Services Providers
- NGO's

Evaluation Framework

Program evaluation will be based on data gathered from output indicators, data gathered from reports of program activities; and follow-up personal interviews with the target audience.

Program Duration

Long-term (1999–2004)

Allocated Resources

The Community Resource Development Program area will receive federal and state matching funds to conduct programs for persons interested in starting or expanding small businesses. In addition, this program area will provide leadership programs for local community groups and work to revitalize rural and urban communities. Projected FTEs for this program include 2 faculty positions and 3 graduate assistants.

Education and Outreach Programs

- Training Meetings
- Seminars and Conferences
- Publications
- Video and Slide Sets

Program Area 11: Preparing Florida's Youth for the World of Work

Statement of Issue

The concern with the capacity of the American workforce to command the knowledge and skills needed to capture the new jobs of the 21st century has been theme of central interest to many educators, employers, decision-makers, and others during the last decade. Due to rapid changes in technology, and the expanding need for an educated, flexible, and multi-skilled workforce, increasing attention has been given to the need to invest in our country's human resources. The focus has been not only on the retraining of the current workforce to better align itself with the emerging and expanding jobs, but also one of providing young individuals with

the quality education and experiences they need to move successfully into the labor force upon completion of their schooling.

Why do concerns exist with the transition of our youth into the world of work? Mainly because the workplace is undergoing such dramatic shifts. Over the course of the next 15 years, over 80 percent of all new jobs will be produced in the service sector. Few will be created in the goods producing sector, the very industry that served as the economic foundation of many communities (particularly rural communities). Because many of these service jobs tend to require more education and skills, many communities and individuals might find themselves in dire straits if no preparations are made. Evidence already exist that communities with poorly educated workers are not attracting the better paying jobs, thus accelerating the migration of the more educated and skilled workers to superior employment opportunities elsewhere. Loss of these quality human resources is especially evident in many of Florida's rural counties.

In rural communities, the success in recruiting large industries from outside the state to relocate to these smaller populated areas has been limited at best. In essence, the economic development growth in rural areas will be realized through self-development activities. This means enhancing the skills, knowledge, and entrepreneurship of the people who are already living in these areas. Economic strength is likely to be realized through a focus on the internal resources and innovativeness of local residents, including youth.

Performance Goals

- Access changes in the complexion of the U.S. and Florida economies.
- Research changes in the demand for educated workers.
- Identify critical problems with the future supply of workers.
- Assist decision-makers (individuals, family, organization, community, or a larger entity) in assessing specific socioeconomic issues or the socioeconomic implication of more general rural/urban concerns.

Output Indicators

Extension

- Number of youth provided with the opportunity to explore and understand career opportunities that are consistent with the high demand jobs of the future.
- Number of youth provided with educational programs that teach employability skills that can facilitate future career opportunities for Florida's youth.
- Number of families and communities interested in facilitating the career education and exploration opportunities of local youth.
- Number of communities interested in exploring and implementing strategies for keeping its educated youth in the community.

Research

- Youth better prepared for career choices and opportunities
- Youth with better employability skills
- Youth with greater understanding of career opportunities consistent with demand for jobs in the future

Outcome Indicators

- Youth will make successful career choices and transitions, including the development of entrepreneurial skills
- Youth will improve their basic scientific and technological literacy, and greater numbers of capable youth will learn about and be encouraged to consider scientific and technological careers
- Parents and volunteers will learn new ways to prepare youth to live responsible, capable, independently, and interdependently

Key Program Components

- Teach youth and adults to make an educated analysis of their career options
- Provide youth with an exciting introduction to science and technology – preparing them to deal with the world of tomorrow and perhaps encouraging them to choose a scientific career
- Encourage young people to update their skills – to keep up with changes in the workplace and to take advantage of new opportunities

Internal and External Linkages

- Multi-State: Georgia, Alabama
- Multi-Institutional: University of Florida, IFAS
- Multi-Discipline: Agricultural Education, Extension Agent, Agriculture, Animal and Plant Science, Business

Target Audiences

- Pre-teens and adolescents
- Adult volunteer leaders
- Parents/Guardians
- Business and Community-Leaders/Representatives

- School Officials
- Public Sector Representatives
- County Extension Faculty

Evaluation Framework

Where feasible, pre- and post-test instrumentation will be administered to youth who are involved in various components of this program. For example, with respect to the entrepreneurship educational program, an assessment will be made of managerial skills learned, type(s) of employment resulting from the training, and the success of self-employed businesses owned and operated by 4-H youth. It is expected that personal and focus group interviews will be conducted with business leaders, community leaders, school officials, and parents for the purpose of assessing the effectiveness of various facets of this program.

Program Duration

Long-term (1999-2004)

Allocate Resources

The 4-H Youth Program will receive federal and state matching funds for this program. Projected FTEs include 5 faculty positions, 2 Program Assistants, and 5 FTE temporary student intern positions.

Education and Outreach Programs

The bulk of resources needed to support this new program will be developed over the course of the four-year effort from Core Programs as well as sources in other states and organizations. Some career exploration resources particularly in the area of health, will be available for use during the early stages of this program. Current curriculum includes:

1. Focus on Health Careers (12-14 and 15-18 years old)
2. Marketing You – Resume Development Program
3. Mentorship programs such as with Honda
4. Horticulture project in Lawn Care and Mowing
5. Program guides for parents (to be developed)
6. Program guides for community and business leaders (to be developed)

Academic Programs

The current academic programs offered in the College include: Bachelor of Science degrees in Agri-business, Landscape Design and Management, Agriculture (options in Agricultural Education, Agronomy, Animal Science, Entomology, Food Science, Ornamental Horticulture, and a 2+2 program in Forestry and Natural Resources); Biological and Agricultural Systems Engineering and in Engineering Technology (Civil, Construction, and Electrical); a Maser of Science degree in Agricultural Sciences and a Doctor of Philosophy degree in Entomology, in affiliation with the University of Florida. **The proposed additional academic programs include:** Bachelor of Science degrees in International Agriculture and Business, Marine Science and Technology, Food Science and Technology, Industrial Engineering Technology, Master of Science degrees in Biological and Agricultural Systems Engineering, Engineering Technology, Food Science and Technology, and Doctor of Philosophy degrees in Agricultural Science, Biological and Agricultural Systems Engineering, Engineering Technology and Food Science and Technology.

International Agricultural Programs

One of the unique goals of the College of Engineering Sciences, Technology and Agriculture is to enhance its global competitiveness through distance learning and the internationalization of its teaching, research and extension programs. The Office of International Agricultural Programs, working in collaboration with the other three land grant program areas within the College, serves to strengthen the services provided to FAMU's stakeholders, and assists in the preparation of its students for successful employment in an increasingly complex, dynamic and global marketplace. Through this program area, students and faculty are to maintain a global perspective of their educational and professional development, while providing valuable service to an international clientele.

**Florida A&M University
Allocation of Resources
FY 2000
(10/01/99 - 09/30/2000)**

I. Research

	Federal* (Evans-Allen) Section 1445	State Match (30%)
Goal 1		
Program Area 1: Viticulture	250,000	60,000
Program Area 2: Statewide Goat Program	150,000	60,000
Goal 2		
Program Area 4: Biological Control	300,000	30,000
Goal 3		
Program Area 5: Health, Nutrition & Food Safety	51,917	85,000
Goal 4		
Program Area 6: Water Quality and the Environment	300,000	44,500
Program Area 7: Mosquito Control	-0-	-0-
Goal 5		
Program Area 8: Small Farm & Rural Development	150,000	81,075
Total	1,201,917	360,575

*Based on FY 99 USDA/CSREES appropriation

**Florida A&M University
Allocation of Resources
FY 2000
(10/01/99 - 09/30/2000)**

II. Extension

	Federal* Section 1444	State Match (30%)
Goal 1		
Program Area 1: Viticulture	-0-	60,000
Program Area 2: Statewide Goat Program	-0-	60,000
Goal 2		
Program Area 3: Profitability of Small Scale Crop Production	186,167	42,500
Goal 3		
Program Area 5: Nutrition, Diet and Health in Florida	186,167	42,500
Goal 4		
Program Area 6: Water Quality and the Environment	136,167	15,235
Goal 5		
Program Area 8: Small Farm and Rural Development	186,167	35,000
Program Area 9: Financial Management and Decision-making in Florida	186,167	80,000
Program Area 10: Community Resource Development	86,174	-0-
Program Area 11: Preparing Florida's Youth for the World of Work	150,442	-0-
Total	1,117,451	335,235

*Based on FY '99 USDA/CSREES appropriation