AREERA PLAN OF WORK

University of Florida and Florida A&M University
Institute of Food and Science
Research and Extension

Federal Fiscal Years
1999-2004

AREERA EXECUTIVE SUMMARY

AREERA Executive Summary

The University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) and Florida Agricultural and Mechanical University (FAMU) are the land-grant agricultural institutions for the state of Florida (1862 and 1890 institutions, respectively). UF/IFAS programs are located at the main campus in Gainesville, at 22 research and education centers statewide, and in all 67 Florida counties. FAMU's programs are located at the main campus in Tallahassee and through their research and extension programs they interact with minority and limited-resource farmers in eight counties in northwest Florida and one in central Florida. This report will include information from Florida A&M extension and University of Florida research and extension.

UF/IFAS' mission is to "develop knowledge in agricultural, human and natural resources, and to make that knowledge accessible to sustain and improve the quality of human life." As part of its efforts to fulfil its mission, UF/IFAS developed Florida 2000 and Beyond, which is a long range planning effort involving UF/IFAS faculty, staff and customers throughout Florida. Florida 2000 and Beyond provides the framework for specific programs to meet Florida's critical need issues. Through the planned program initiatives, UF/IFAS provides research, extension and educational leadership required for the compatible use of agriculture, natural and human resource systems throughout the state. In an effort to define and/or redefine critical need and compatibility issues, Florida leaders from industry, government and education joined together on May 20-21, 1999 at a conference called Florida FIRST. Florida FIRST is an acronym for Focusing IFAS Resources on Solutions for Tomorrow. According to Mike Martin, UF Vice President for Agriculture and Natural Resources, the Florida FIRST effort will "identify research and extension imperatives for the new millennium to insure a sustainable, competitive food, fiber and agricultural system and enhance natural and human resources." These imperatives will not only identify present critical issues, but also include an analysis of major trends and determinants of change including technological, human, natural resources and institutional forces that may require immediate research in preparation for expected critical issues in the future. Besides the conference, UF/IFAS has set up a post office box and e-mail address where citizens, agricultural, natural and human resource interests are encouraged to send additional suggestions. There is also an advertised website that provides information on Florida FIRST (see Appendix A).

As the new millennium draws closer, Florida is focused on identifying and meeting new issues and needs, but the Florida land-grant universities have always understood the importance of stakeholder input in the identification of critical issues. From the grassroots to the university level, advisory committees are an intricate part of the identification process for extension and research. Both FAMU and UF have developed general and commodity-related advisory committees and special emphasis has always been placed on including representation from the underserved and underrepresented population. One way this is accomplished is by looking at local or state demographics and census information to identify populations and comparing this information to the

demographics of each advisory group. All Florida advisory committees make this selection process a priority whether it is FAMU's commodity oriented Goat Program Advisory Council, the County Extension Advisory Committees located in each of the 67 counties, or the state level Research and Education Center Advisory Committee. (For a list of Florida land-grant university stakeholder groups and guidelines see Appendix B)

Once stakeholders have identified critical issues research and extension follow a specific process. Broad issues identified with extension that involve multiple areas of the state are addressed with support from State Major program (SMP) design teams comprised of faculty from both land grant universities. Critical research needs are addressed through interdisciplinary project teams. Extension design teams develop appropriate teaching strategies utilizing a variety of approaches including mass media, group meetings, individual consultations and technology. Research project teams closely linked with extension design teams support these education programs. These design teams and research project teams specify whether the critical need being addressed will be addressed as short, intermediate or long-term time frames.

The Florida land-grant universities collaborate with a multitude of universities not only in Florida, but nationally and in some cases internationally. Florida land grant colleges are members of numerous regional organizations including The Southern Regional Extension Directors Association, The Association of 1890 Extension Directors, and The Southern Association of Agricultural Experimentation Station Directors. Through these organizations Florida land grant universities working with other universities across the country are able to identify and address agricultural issues that extent beyond state boundaries and which will benefit from joint cooperation. Individual Florida land grant faculty have also taken this same initiative in many cases and have developed and implemented many multistate programs and projects. Multistate involvement ranges from the less formal letter of memorandum to formal agreements. University collaborations for each state major program and formula funded research project have been identified in the table section of this report. A guide to Florida multistate programs can be found in Appendix D.

Research and Extension projects and programs that are developed and implemented in Florida are all based on stakeholder identified critical issues within the state. Because of this requirement, all research and extension activities, regardless of their funding cooperate wherever possible to address critical needs. Using critical needs as the foundation for projects and/or programs also makes it easier to identify projects and/or programs that may compliment or reinforce each other allowing for separate, sequential or joint ventures that provide the most efficient and effective use of all funding.

Using critical needs as the focal point also allows IFAS to develop research and then disseminate it through out the state or in targeted counties where the issues exist-- thus giving the best exposure of the research findings to the Florida population. In many

cases, the researcher holds a joint appointment in extension and research, which adds to the smooth transition from the research arena to the clientele. In cases where there is not a joint appointment, a well-developed inservice training program exists to provide extension personnel with the information obtained through research. This information is also often used in joint activities involving numerous organizations and private or public agencies. Research/extension integration is identified in the table section of this report. Several examples of research/extension collaborations are:

In rural North Florida counties more than 177,000 acres of traditional row crops were taken out of production in the late 1980's. Following research on alternative crops and advanced production techniques, the Florida Cooperative Extension Service was directly responsible for the subsequent dramatic turnaround in the area's distressed farm economy. As a result, farm income has been up by more than $33 million in the last four years in the seven north Florida counties involved in the program. Realizing that it was not enough to fill these acres with one or two newly researched crops, research identified a variety of new vegetable and alternative crops which extension faculty introduced along with advanced production techniques, such as plastic mulch and micro-irrigation, to cut costs, increase yields and reduce water consumption by 50 percent (all critical issues in Florida). Research and Extension personnel also turned a difficult environmental problem into a plus by using treated nutrients in poultry and dairy waste to safely fertilize vegetable crops in the fields. A recent survey shows that more than 75 percent of all growers have adopted recommended production systems and environmental controls which have boosted crop yields by 30 percent.

In heavily urbanized Orange county, home of Disney World, 805,837 permanent residents and approximately 39 million yearly tourists, an enormous burden is placed on wastewater treatment facilities and the fragile ecosystem of central Florida. The Florida Cooperative Extension Service in partnership with the city of Orlando, Orange county and several other agencies came up with a method of reclaiming twenty-seven million gallons of water each day that is used to irrigate 4,000 acres of citrus groves within a tri-county area and protect them from freeze. Called Conserve II, the project is the largest water re-use program of its kind in the world and the first in Florida used to irrigate crops intended for human consumption. The $190 million project is totally computerized allowing technicians to monitor water from the time it leaves Orlando until it reaches the groves. Since citrus continues to be one of the top sources of agriculture revenue in the state, research involving the use of wastewater nutrients and citrus irrigation techniques are just a few of the ways that researchers have assisted and continue to assist in the Conserve II program.

A final example of research-initiated education and outreach programs is the Integrated Pest Management (IPM) program. No one wants the Florida school system to be an unsafe environment for Florida's three million school-age children. And yet, until 1996, 78 percent of Florida school districts were doing routine spraying of pesticides whether pests were present or not. To reduce the pest population and protect the human

population, the Florida Cooperative Extension Service presented six regional research-based workshops on IPM with representatives from every school district in the state attending at least one. Following the workshops, the percentage of school districts using routine spraying of pesticides dropped from 78 to 36 percent. In 1998 the Florida Cooperative Extension Service developed the National School IPM home page on the Internet (see appendix A) to keep on-going research results and other factual information current throughout the state.

These are only a few of the many examples of education and outreach programs that are already underway to convey available research results that are pertinent to critical agriculture, natural, and human resource issues. Also, through the Scientific Peer research process and the new Extension Merit process (Appendix C) the Florida land grant universities hope to make the identification and evaluation of research/extension integrated efforts even easier and more effective.

This relationship between research and extension will also involve the integration of projects/programs that are funded other than through the formula funds since the binding factor is the critical issue rather than the origin of the funding. Also, many faculty members hold joint appointments in extension and research. Through these faculty members Smith –Lever, Hatch, special grants and other funding are woven together to fund the many projects and programs developed and implemented through IFAS research, extension and education.

I. AREERA TABLE OF CONTENTS

I TABLE OF CONTENTS

Executive Summary

II. Planned Critical Need Programs (identified by stakeholders)

Research and Extension

Goal 1

Program 1. Food Crops and Crop Production

Program 2. Value Added Agriculture and Sustainable Agriculture

Program 3. Forest and Natural Resource Enhancement

Program 4. Fundamental Plant Sciences

Program 5. Plant Genetic and Germplasm Enhancement

Program 6. Citrus and Other Fruit Crops

Program 7. Green Industry (Turfgrass/Horticulture)

Program 8. Improved Grazing Systems in Animal Production

Program 9. Understanding the Physiological Basis of Animal Disease, Pests Reproduction, Growth and Well Being

Program 10. Genetic Enhancement of Agriculturally Important Animals

Program 11. Aquaculture

Program 12. Develop and Integrate Nutritional Knowledge to Enhance Animal Production

Program 13. Potential of Alternative Livestock for Florida's Economic Enhancement

Program 14. Economic Competitiveness

Program 15. Agricultural Risk Management

Program 16. Agricultural Information Technology

Program 17. Pest/Disease

Program 18. Weed Management

Goal 2

Program 19. Reduction of Physical, Chemical, and Biological Negative Components Introduced into Human and Animal Foods

Goal 3

Program 20. Improving Human Foods: Functionality, Selection and Nutrition

Program 21. Fiber-Related Products (Textiles and Apparel) and Businesses for Protection, Social, and Economic Enhancement

Goal 4

Program 22. Precision Agriculture

Program 23. Organic Agriculture

Program 24. Sustainable and Environmentally Safe Management of Soil Resources

Program 25. Integrated Pest Management/Biological Pest Management

Program 26. Animal Waste Management

Program 27. Water Resources

Program 28. Interactions Among Agriculture Biosystems, Weather and Climate

Program 29. Environmental Quality in a Changing Landscape

Program 30. Enhancement of Environmental Quality in Animal Production

Program 31. Nutrient Management

Goal 5

Program 32. Community Economic Development

Program 33. Family and Consumer Sciences (Quality of Life)

Program 34. Youth and Human Development

III. Tables (includes: allotted resources by project and program, multi-state collaboration, linkages, integrated research/extension, matrix of allotted resources by goals, etc.)

IV. Appendix

- ***A. Website addresses***
- ***B. Stakeholder groups and guidelines***
- ***C. Scientific peer and Merit Review Guidelines***
- ***D. Multi-state***
- ***E. Land Grant Universities Director Letter of Certification***
- ***F. Florida Citizen's Viewpoint 1999 Survey***
- ***G. Florida FIRST list***

II. PLANNED CRITICAL NEED PROGRAMS

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

Program Need 1: Food Crops and Crop Production

Statement of Issue:
Florida has a large and diverse agricultural economy, with farm level cash receipts exceeding $5.8 billion in 1995. Florida leads the nation in production of several major agricultural commodities. These crops and many others are produced on over 35 thousand farms. Land managed for agricultural production includes 10.7 million acres of farmland and 13.6 million acres of commercial forest, together representing about 70% of the state's land area. In 1994, the total economic impact of agriculture and related processing and service activities was estimated at $16 billion annually. The production, marketing and selling of vegetable crops provide one of the highest income revenues in the state. To remain competitive in the rapidly changing global economy, these producers must adopt new cultivars/rootstocks that are more tolerant to abiotic and biotic stresses affecting plants, cultural systems that improve production efficiency and promote sustainability, and post-harvest handling practices that improve crop utilization and product safety. Before extension can promote new cultivars, production systems or post-harvest practices can be recommended, they must be scientifically researched and evaluated under Florida environmental conditions.

Programs and Projects:
Smith- Lever - FL115
CSRS – 3242
CSRS – 3333
CSRS – 3528
CSRS – 3529
CSRS - 3778
Hatch – 3269
Hatch - 3527
RRF - 3525

Performance Goals:
I. Increase the Quality and Percentage of Marketable product per acre
II. Reduce production costs
III. Increase business profitability through improved cultural techniques and use of adapted fruit and vegetable cultivars
Iς. Improve the access to an affordable and safe food supply
ς. Improve the harmony between horticulture practices and the environment

Output Indicators:
Extension:
I. Number of Individual Consultations
II. Number of Group Learning Experiences
III. Number participating in Group Learning Experiences
I. Number of Educational Materials Prepared

Research:
I. Better Adapted Fruit and Vegetable Cultivars
II. More Efficient Cultural Practices
III. Greater understanding of the ripening and senescence processes
Iς. Production practice options for reducing the over reliance on chemicals

Outcome Indicators:
I. Greater Profitability and competitiveness
II. Reduction of crop losses
III. Reduction of post-harvest losses
Iς. More rational/efficient use of agriculture chemicals by producers

Key Program Components:

I. Improve the production efficiency and increase the competitiveness of the Florida fruit and vegetable industry through the increased use of adaptive cultivars tolerant to abiotic and biotic stresses
II. Improve production management systems
III. Develop efficient and sustainable practices that ensure ecosystems integrity and enhance the quality of water, soil, and air resources
Iç. Improve post-harvest handling practices to maintain quality, reduce product loss, and improve food safety

Internal and External Linkages:
See section III. Tables

Target Audiences:
I. Farmers, business managers, public officials and agency staff at state and local levels.

Evaluation Framework:
I. Post-meeting evaluation surveys will be conducted to improve understanding of how well (or how poorly) educational efforts address the informational needs of target audiences.
II. Efforts can be made to identify specific instances in which communication improves, conflict abates, or innovative alternatives to regulation are adopted.

Allocated Resources:
See section III. Tables
Education and Outreach Programs:
Commodity related workshops related to crops and crop productions

Program Need 2: Value Added Agriculture and Sustainable Agriculture
Statement of Issue:
Agriculture in Florida faces several considerable challenges. One of commercial producers' greatest challenges is to remain productive and globally competitive in the face of ever-increasing demands for land, water, and environmental amenities by the state's rapidly growing population of over 14 million residents and the 40 million visitors who support the state's largest industry, tourism. Much of Florida's urban development occurs in areas traditionally devoted to agricultural production or around sensitive inland and coastal environments. One way to improve the economic situation for producers is to add value to the commodities they currently produce. Value can be added to these commodities through the research of new applications for these products that will increase demand and income. These new applications may include additional food or feed uses or may incorporate more non-traditional applications such as fuels, compost products etc. Another potential benefit of adding value to traditional crops and products could be the new processes developed that require new types of processing techniques and processing facilities in the state which could result in increase employment opportunities for the citizens of the state of Florida

Programs and Projects:
Smith-Lever - FL101
Smith-Lever - FL107
Smith-Lever - FL121
Smith-Lever - FL129
Smith-Lever - FL261
Smith-Lever - FL265
Hatch – 3522
Hatch – 3741
CSRS – 3629
CSRS - 3720
CSRS - 3763

Performance Goals:

I. Assess the potential benefit of identifying value-added uses for basic agricultural commodities
II. Evaluate current farming and processing methods to identify low-value by-products and waste streams that can be used in other products, thereby increasing their value and reducing potential environmental problems
III. Develop research projects to evaluate the technical and economic feasibility of using these materials to identify applications
Iç. Strive to transfer the technology from any successful research efforts to the marketplace for the purpose of providing employment, rural development, and improving the profitability of farmers in the State of Florida.

Output Indicators:

Extension:

I. Number of Individual Consultations
II. Number of Group Learning Experiences
III. Number participating in Group Learning Experiences
Iç. Number of Educational Materials Prepared

Research

I. Greater understanding of how to quantify the benefit of adding value to agriculture commodities and by-products
II. Technology that utilizes agricultural products as value added components in food, non-food, and/or feeds
III. Key commodity boards, community development groups, state agencies, and industries that show interest using technology to start new companies or expand existing operations

Outcome Indicators:

I. Increased value of agricultural commodities
II. Increased value of under-valued by-products from producers and processors that will lead to improved land management and a reduction in waste streams
III. Improve cooperation between the university, state and federal agencies, industry and communities to transfer technology that will lead to industrial growth and urban/rural development that is beneficial to Florida agriculture

Key Program Components:

I. Study the economic impact of adding value to agricultural commodities on producers, processors and communities.
II. Study the economic and environmental impact of finding value-added uses for low valued by-products and waste streams.
III. Initiate new research projects to determine the feasibility of using these products in food, feed and nonfood applications.
Iç. Transfer the technology from the laboratory research projects to private industry.

Internal and External Linkages:

American Society for Plasticulture
American Society of Agricultural Engineers
Boer Goat Association (TX)
Brazilian Enterprise for Agricultural Research (EMBRAPA, Brasilia, Brazil)
Dairy Goat Association (FL)
Farm Bureau
Farm Service Agency
Federation of Southern Cooperative
Florida DEP
Florida Department of Agriculture and Consumer Services

Florida Fruit and Vegetable Association (Orlando)
Florida Irrigation Society
Florida Organic Growers and Consumers
Florida Perennial Peanut Producers Association
Florida State Horticultural Society
Florida Sugarcane League
Full Circle Solutions
Guam Cooperative Extension Service
Heifer Project International (Southern Region)
International Society of Sugar Cane Technologists
Irrigation Association
Marion County Small Farm Association
Meat Goat Association (FL,AL,TX)
National Small Farm Program, USDA
North Florida Green Markets Association
Puerto Rico Cooperative Extension Service
Soil and Crop Science Society of Florida
Southern Commercial Rabbit Producers Association
Southern Region Sustainable Agri Res and Edu Prof Development Program
Sustainable Agriculture Research and Education Program, USDA
US EPA
USDA National Resources Conservation Service
USDA National Small Farm Conference
USDA/ARS
Water management districts

Target Audiences:

I. Farmers, agribusiness people, county agents, public officials, other state agricultural agencies, and the general public.
I. Public officials, growers, agricultural industry, packers/shippers, produce buyers, agricultural consultants and consumers.
II. Small farmers throughout the state where "small" is defined as:
    Farms of 50 acres or less and/or
    Farms with gross sales <$50,000 and/or
    Farms where the primary farm operator's principal source of income is from non-farm activities.
I. Agribusiness representatives who interact with the clientele.
II. Florida Sugar cane growers (135 muck and sandland), managers, employees, other sugar cane industry affiliates and Local, State, and Federal Government agencies having an interest in sugar cane production.
III. Small and small-scale farmers, landowners, wholesalers, retailers, and industry.
Iς. Small-scale crop producers in north Florida counties.

Evaluation Framework:

I. Determine the number of farmers using the new practice/enterprise.
II. Evaluate the profitability of the new practice versus the old being replaced.
III. Annual economic analysis of small animals and small animals/crop systems and their components employing partial budgeting techniques will be used to calculate the change in production costs, profits, and risks accompanying specific changes in farming practices.
Iς. A comparison of conventional farming practices with the economic performance of alternative farming practices and number of all farmers using alternative production and marketing strategies will also be used to evaluate the major program.
ς. Measuring accomplishment of programs by surveys of target customers to determine changes that actually occurred and how it made a difference in their livelihood. Impacts may be economic, environmental, and social.

A. Economic: While gross farm income and net farm income cannot be determined directly for individual farms as they implement recommended practices, surveys should indicate the impact. Also changes in acreage of crops, development and activity of farm supply operations, farm processing and marketing facilities provide measures of the community economic impacts. Also the activity of farm lending agencies, participation in federal programs, and other organizations that are impacted by farm activities will be evaluated.

B. Environmental: These impacts will be evaluated by surveying customers on the acceptance of IPM programs, the percentage of acreage being scouted, use of BMP, changes in pesticide use, adoption of pesticide stewardship practices, use of pest resistant varieties, use of soil conservation practices, participation in federal programs for environmental protection, conservation of natural resources, the number of citations for pesticide misuse, and the occurrence of mishaps concerning pesticides.

C. Social: These impacts will be measured by surveys that indicate the number of farmers that remain active, numbers of farm youth that go into agricultural operations, new farmers, and estimates of jobs provided because of adoption of recommended practices.

ςI. Production records and costs will be reviewed to determine if increased system efficiencies have been achieved. In addition, enterprise and partial budgeting will be used in the economic evaluations.

ςII. Attendance will be recorded at events such as field days, short courses, and seminars. Information will be collected from program participants.

ςIII. Surveys completed by growers will be examined to determine changes in management decisions and overall satisfaction with the program.

IΞ. When providing information and/or recommendation on an individual basis, follow-up information will be collected via telephone calls to determine if grower's needs were met and if changes practices resulted from the assistance provided.

Ξ. As part of a four-year program, sugar cane production data and management practices will be surveyed to measure system efficiency, environmental impacts, and changes in management decisions.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Conservation tillage demonstrations
Crop production meetings
Evaluation pigeon pea and roselle (Hibiscus sabdariffa) as alternative crops
Fertility workshops
Field days
Ground water monitoring for nitrates
Grower’s Seminars
Journal and magazine articles and speeches
Marketing and financial management seminars
On-farm variety demonstrations
On-station adaptive and applied research of nutrition and breeding of meat animals
Peanut maturity demonstrations
Pesticide stewardship programs
Plots tours
Production and marketing of hot pepper
Radio and TV shows
Scout schools to train cotton insect scouts
Short courses in peanut and tobacco
Sugar Cane Production Short Course
Update of the Florida Sugar Cane Handbook

Weekly and monthly newsletters

Program Need 3: Forest and Natural Resource Enhancement

Statement of Issue:

Florida's forestland is rapidly being lost to alternative uses. Deforestation is occurring at an alarming rate of 70,000 acres per year. The deforestation rate of -0.4% is typical of the Caribbean. Out of every four acres which are harvested in Florida, only one acre is replanted with new forest seedlings. The forest industry in Florida is valued at over 10 billion dollars. Of course, this does not include the other values of forests such as beauty, wildlife, recreation, and clean water and air. Due to decreased habitat, eight wildlife species have become extinct in recent years and over 120 are listed as endangered, threatened, or of special concern. Florida landowners continue to need information on how to reforest and manage their lands for the diversity of resources and values that forests provide. Florida's cities are also recognizing the importance of urban trees and forests. An urban tree, by providing shade and wind protection, can reduce annual energy use by 15-30%. Urban forests can act as important stepping stones connecting ecosystems and benefiting wildlife. They can also conserve water, help with storm-water management, and reduce soil erosion. Yet, urban forests often face extremely harsh and stressful conditions, and the average life span of a newly planted urban tree is about seven years. Most cities have over one half of their plantable spaces vacant and could benefit from reforestation programs. Educational programs are needed throughout the state to assist Floridians in conserving and managing the valuable and beneficial forest resources that remain.

Programs and Projects:

Mc-St 3506
Mc-St 3562
CSRS 3621
Mc-St 3683
Mc-St 3541

Performance Goals:

The overreaching goal of this research effort is to improve environmental quality and the creation of value-added products. And to:

I. Protect the soil resource, increase crop yield, improve water quality, and enhance biological diversity
II. Provide a low cost means of energy savings, improve the aesthetics and livability of populated areas and improve air quality
III. Meet the growing demand for wood fiber based products and to address the changing attitude of society concerning the best and highest use of these resources
Iς. Protect environmental quality while supporting economic development on a broader front

Key Program Components:

I. Expand the knowledge base on how to establish and manage field and streamside buffers, the efficiency of chemical and carbon capture in environmental buffers, and increases in crop yield.
II. Improve stream water quality.
III. Increase wildlife and desirable insect species.
Iς. Reduce soil erosion.
ς. Enhance ability to manage and improve urban and suburban forests.
ςI. Develop composite fiber products that make use of both virgin and waste plant.
ςII. Develop glues and preservatives that are both environmentally friendly and add value to agricultural commodities.
ςIII. Develop fast-growing disease- and insect-resistant trees (primarily Populus sp.), identify resistant clones with desirable traits, enhance of these traits through traditional tree breeding and genetic engineering, and test and commercialize the clones developed.

Internal and External Linkages:

See section III. Tables

Target Audiences:
General public; forest industry personnel; environmentalist

Evaluation Framework:
Evaluation of usefulness of completed research

Output Indicators:
Extension:

IΞ. Number of Individual Consultations
Ξ. Number of Group Learning Experiences
ΞI. Number participating in Group Learning Experiences
ΞII. Number of Educational Materials Prepared

Research

I. Improvement of surface water quality.
II. Improvement in livability of the urban-suburban environment.
III. Development of value added wood based products.

Outcome Indicators:
Reduction in stream water nitrogen and suspended solids concentrations.

I. Development of dedicated wood fiber plantations that make minimum use of chemical additions for disease and pest control.
II. Better placement and survival of a variety of tree species in urban and community settings.
III. Broader application of plant fiber composite materials in the building, paper, and furniture industries.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
N/A

Program Need 4: Fundamental Plant Science
Statement of Issue:
The need to continuously increase crop production, improve food quality, and provide alternative crops with higher market value while minimizing the environmental impact of agriculture has greatly taxed our understanding of fundamental plant biology. Understanding the basic properties of crop plants requires the application of a broad group of biochemical, molecular biological, physiological and ecological techniques to crop plants. Metabolic pathways for the synthesis of important bio-chemicals along with the key control points of these processes need to be determined. Developmental events that result in the production of vigorous mature plants that will produce well in Florida's environment must be understood. The methods that plants use to detect and respond to changes in Florida's environment need to be determined so that plants can be genetically altered to make them less stress sensitive. Key bio-diversity questions need to be answered to determine how crop plants interact with the agricultural environment in order to minimize the deleterious effects of intensive agriculture.

Programs and Projects:
CSRS - 3425
CSRS - 3454
CSRS - 3470
CSRS - 3628
CSRS - 3652

CSRS - 3658
CSRS - 3675
CSRS - 3686
CSRS - 3714
CSRS - 3716
CSRS - 3724
CSRS - 3746
CSRS - 3755
CSRS - 3767
CSRS - 3424
CSRS - 3560
CSRS - 3565
CSRS - 3354
CSRS - 3390
CSRS - 3445
CSRS - 3475
CSRS - 3643
CSRS - 3715
CSRS - 3735
Hatch - 3336
RRF - 3267

Performance Goals:

I. Determine basic Scientific advances for evaluation by the scientific community

Key Program Components:

I. Discover new metabolic pathways and alter them for enhanced plant production.
II. Modify plant genomes.
III. Understand how plant developmental events influence crop yield.
Iς. Modify plants for increased pest resistance.
ς. Modify plants to increase stress tolerance.
çI. Understand the plant genome to discover new biological elements that contribute to crop productivity.
çII. Understand how the interactions between plants and their environments influence crop yield.

Internal and External Linkages:
See section III. Tables
Target Audiences:
Crop Industries; Scientific community

Evaluation Framework:
Research outcomes

Output Indicators:
<u>Extension:</u>
çIII. Number of Individual Consultations
IΞ. Number of Group Learning Experiences
Ξ. Number participating in Group Learning Experiences
ΞI. Number of Educational Materials Prepared

<u>Research</u>

I. Acceptance of publications in the most respected journals of the particular field(s) of study.
II. Invited presentations at universities, industries, and scientific conferences.

Outcome Indicators:

I. Competitive funding from federal or private sources to develop the research ideas more fully.
II. Important contributions to the understanding of the biology and chemistry of the plant that are recognized by scientific peers.
III. Application to crops of basic scientific advances.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
N/A

Program Need 5: Plant Genetic and Germplasm Enhancement

Statement of Issue:
New technologies need to be developed to bring powerful new techniques like genetic and post-genetic analyses to bear on improving crop productivity. Also, successful plant breeding programs can be made more effective through advancing germplasm research. Different selection and evaluation methods are used to develop cultivars within and among different crop species, but elite gerrmplasm is necessary to develop new, superior cultivars. Evaluation, development and enhancement require intermediate and long-term commitments to develop superior germplasm sources. Development and genetic enhancement of elite germplasm followed by effective extension outreach programs are necessary to ensure future genetic advancement and acceptance by the Florida producer and consumer.

Programs and Projects :
CSRS - 3132
CSRS - 3780
CSRS - 3257
CSRS - 3374
CSRS - 3413
CSRS - 3458
CSRS - 3601
CSRS - 3637
CSRS - 3706
CSRS - 3713
CSRS - 3760
CSRS - 3441
CSRS - 3533
CSRS - 3743
Hatch - 3310
Hatch - 3667
RRF - 3376
RRF - 3540

Performance Goals:
I. Increase the germplasm base of the major U.S. crop species to reduce the chances of devastating crop losses due to either biotic or abiotic stresses
II. Develop and enhance elite germplasm resources to provide private and public breeding programs a greater array of elite germplasm for cultivar development
III. Improve germplasm to ensure systematic genetic advances of newly developed cultivars
Iç. Enhance specific plant and seed traits to permit alternative uses of the major crop species

Key Program Components:
I. Corn: Develop and enhance germplasm to broaden the genetic base of U.S. corn breeding programs.
II. Forage Grasses: Identify plant characters appropriate for use as selection criteria for genetically improving stability, quality, and productivity of hay, silage, and pasture crops; develop and modify

breeding methods for use in improving broadly-adapted germplasm of forage crops; develop and evaluate experimental populations and cultivars for use in sustainable, integrated, crop-livestock production systems.

III. Small Grains: Breeding for improved turf grasses; enhance grain yield, grain quality, disease resistance, and profitability of the oat crop through traditional breeding integrated with molecular-marker-assisted breeding; elucidate genomic structure and organization of the Avena genus using molecular genetics; develop quantitative genetic models to understand the ecological interactions of oats with companion species and the relationships between genotype and phenotype.

Iς. Soybean: Develop improved general-use and special-purpose soybean cultivars for use by farmers; expand genetic variation for agronomic and seed traits; assess the impact of new genetic types on production and use of the crop; evaluate breeding methods that will enhance cultivar development.

ς. Alternative Crops: Improve the genetic germplasm of possible alternative crops, including horticultural crops, that have potential for production and use under Florida conditions.

Internal and External Linkages:
See section III. Tables
Target Audiences:
Scientific community; plant industry

Evaluation Framework:
Evaluation process at completion of research

Output Indicators:
Extension:

ςI. Number of Individual Consultations
ςII. Number of Group Learning Experiences
ςIII. Number participating in Group Learning Experiences
IΞ. Number of Educational Materials Prepared

Research

I. Genetically improved germplasm source generally available for cultivar development or for producer use.
II. Modifications of seed and plant will enhance future options for uses of the crops.
III. Information relative to effectiveness of breeding and selection methods will be published in refereed journals.

Outcome Indicators:

I. Genetic gains for yield of new cultivars.
II. Expanded potential uses and markets for specialty types.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
N/A

Program Need 6: Citrus and Other Fruit Crops
Statement of Issue:
Commercial citrus acreage increased 8% from 1992 to 1994 with major new plantings in the southern and east coast areas. However, depressed prices, especially for some fresh fruit cultivars, have highlighted the importance of cost effective production practices. Pest management, citrus fertilization and related nutrient leaching problems, regulatory compliance and environmental concerns are motivating growers to focus on economic and environmental sustainability rather than maximum production.

Commercial Situation: As of 1995, Florida avocado and mango acreage appears to be (approximately 6,141 and 1,880 acres respectively) and lime acreage is increasing (3,186 acres). Acreage of carambola (532 acres), mamey sapote (307 acres), lychee (511 acres), longan (294 acres), guava (197 acres), papaya (350 acres), atemoya (41 acres), sugar apple (50 acres), and bananas (300 acres) has increased. Commercial acreage of pummelo (40 acres), acerola (37 acres), jackfruit (5 acres), key lime (15 acres), kumquat (35 acres), sapodilla (30 acres), canistel (1 acre), and white sapote (2 acres) may increase in the near future. Many of these crops have potential for further expansion. The major tropical fruit crop producing counties in Florida in decreasing order are Dade, Lee, Collier, Broward, and Palm Beach. Small commercial plantings have been
established in Indian River and Charlotte County.

Constraints facing the industry include a lack of information concerning current production practices (e.g., fertilizer and irrigation management), integrated pest management strategies, post-harvest handling and processing, and marketing. Additional problems include: limited information on cultural practices that prevent and/or ameliorate periodic wet/flooded conditions, limited pesticide availability and registration, increased regulatory restrictions on water availability and use, and lack of desirable cultivars.

Homeowner Situation: Homeowner interest in tropical fruit crops is increasing throughout the middle, southeastern, and southwestern coasts of Florida. This is reflected in the number of contacts with Extension for information and the increase in rare fruit associations.

Constraints facing the homeowner include a lack of basic horticultural information concerning tropical fruits. This includes site selection, fruit crop and cultivar selection, cold protection, fertilizer and irrigation practices, and pest control.

Programs and Projects:
Smith-Lever - FL108
Smith-Lever - FL111
Hatch - 3305
Hatch - 3356
Hatch - 3278
Hatch - 3408
Hatch - 3700
CSRS - 3365
CSRS - 3326

Performance Goals:

I. Develop management strategies that improve the efficientcy of crop production while protecting the natural resources base
II. Develop improved, integrated weed management systems for cropping systems
III. Improve the production and utilization of forages
Iς. Advance the understanding of seed development, maturation, germantion, and dormancy to improve seed quality, emergence and early season growth of crops, and to allow natural management of weed and seed banks.
ς. Improve reliability of crop production systems during severe climatic variability to gain increased production efficiency with higher average yields
ςI. Improve quality, uniformity, value, and marketability of agricultural products by developing genetically improved crops with higher-value products

Key Program Components:

I. Improve understanding of the biology and ecology of weeds in the agroecosystem.
II. Identify genetic material or biochemical pathways that help crops maintain dry matter production or limit loses when growing under stressful environmental conditions.

III. Conduct field experimentation of basic production research using modern varieties or cultivars growing in different environments and soils.
Iς. Alter seed chemical composition to increase marketability.
ς. Identify and characterize factors that limit the nutritive value of forage grasses and legumes.
ςI. Develop systems and strategies for improving the seasonal distribution and utilization of forages.
ςII. Understand the basic biology, biochemistry and molecular biology of seed dormancy.
ςIII. Understand the influence of the seed production environment on seed quality and dormancy in a range of crop and forage species.

Internal and External Linkages:
Abbott Labs, Orlando
American Society for Horticultural Science
Arab Republic of Egypt
Arapaho Citrus Management, Ft. Pierce
ATUT Collaborative Res.
Dade County AgriCouncil
DEP
Department of Citrus
Diamond R Fertilizer Company
Division of Plant Pathology
Douglass Fertilizer and Chemical
Fairchild Tropical Garden
Farm Bureau Citrus Mutual
FDOC
FL Division of Plant Industry
Florida Department of Agriculture and Consumer Services
Florida State Horticulture Society
Grove Crafters, LaBelle
Gulf Citrus Growers Association USDA-ARS
Interamerican Society for Tropical Horticulture
International Society for Horticultural Scienc
IR Citrus League
Lime and Avocado Administrative Committees
Monsanto, DuPont, Rhone-Poulenc, Terra,
Novartis, Maxijet Inc., Netafim, Griffin
SF Water Management District
Soil and Water Conservation Districts
St. Johns River Water Management District
Tropical Fruit Advisory Council
Tropical Fruit Growers of South Florida
US Agency for International Development
USDA Farm Service Agency
USDA National Clonal Germplasm Repository, Hilo, HI
USDA National Resource Conservation Service
USDA Subtropical Horticultural Research Station, Miami FL
USDA/FAS/ICD
USDA-ARS

Target Audiences:
I. Commercial citrus nurserymen, growers, packing and processing house managers, agrichemical and related industry personnel. Minor emphasis on homeowners with dooryard citrus.

Evaluation Framework:

I. Timely evaluation procedures will be developed by Extension specialists in their respective areas of responsibility.
II. Acreage and production surveys in minor and major commercial producing counties.
III. Tabulate the number of participants at Extension activities.
Iς. Participant surveys at Extension programs on the impact of a particular program, recommendation, and/or project.
ς. Reports from design team members and extension agents.

Output Indicators:
Extension:
ςI. Number of Individual Consultations
ςII. Number of Group Learning Experiences
ςIII. Number participating in Group Learning Experiences
IΞ. Number of Educational Materials Prepared

Research
I. Sustained and/or improved crop and forage yields.
II. New, more efficient agricultural production systems.
III. Novel techniques, which are more environmentally benign than current tactics, to reduce the competitiveness and fecundity of weeds.
Iς. Increased communication of research productivity via the WWW.
ς. Graduate degrees conferred.
ςI. Refereed and popular publications; meeting presentations.
ςII. Obtained support for grants.
ςIII. Field days and workshops.

Outcome Indicators:
I. Adaptation of weed, crop, and forage management strategies that sustain agricultural crop production and lessen environmental degradation.
II. Maintenance of a quality and diverse seed supply.
III. Incorporation of new genetic material into germplasm to stabilize crop yields.
Iς. Conversion of CRP acreage to sustainable crop systems.
ς. Internet usage of developed web sites.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Farm visits
Local newspaper
Monthly growers meetings and specialized subject matter training sessions
Newsletters
Posted flyers
Programs to maintain production while minimizing production costs
Publications
Seminars
Short courses
Trade shows
Workshops

Program Need 7: Green Industry (Turfgrass/Horticulture)

Statement of Issue:

Turfgrass

The Florida turfgrass industry survey showed that some 4.5 million acres of turf were maintained in the state in 1991/92, with 75% of this acreage in the residential sector. The industry employed 185,000 full and part time workers or 130,000 full time equivalents during the survey year. Around $7.25 billion in cash was spent for producing, maintaining and using turfgrass products and services and industry sales were nearly $7 billion. The non land assets of the industry were valued at $8.5 billion and its valued added was $7.3 billion.

A unique combination of soils and climate make growing turfgrasses in Florida different from other areas in the U.S. Many of the turfgrasses and cultural practices used elsewhere do not apply to Florida, so most of the best management practices must be developed, and evaluated locally. Hence, the turfgrass industry depends greatly on in-state research to define the best grasses and management practices and on effective extension in to deliver the applied research to Florida's turfgrass managers.

Horticulture and Urban Gardening

Vegetable gardens are of substantial importance to Florida citizens, especially to such cities as Jacksonville which abound
in neighborhoods of poverty. Gardens provide improved diets, income supplement, and improved social welfare. According to the Gallup Poll, an average size garden of 300 square feet provides fresh vegetables valued at approximately $350 net. Since 1977 the federally funded Urban Gardening Program has provided annual financial support to Extension for the operation of the Jacksonville project. However, in 1993 that amount was cut, necessitating a drastic reduction in paid staff coupled with a marked dependence upon Duval Master Gardeners for outreach. As a result, in FY94 there were in Jacksonville 20 community garden sites, 123 active plots, 263 home gardens, and 25 school gardens, all involving 2900 participants in the project! In teaching gardening, the staff has emphasized environmental concerns such as composting and wise use of water, fertilizers, and pesticides. State-wide, fruits and vegetables are grown in over 1,000,000 gardens and backyards (value: $350,000,000). Florida Master Gardeners are a vital component of the educational effort. Florida's ornamental plant nursery industry is one of the most rapidly growing segments of agriculture. Collectively the industry had sales at wholesale valued at approximately $600 million in 1993. This figure excludes cut flowers, cut florist greens, in-ground landscape nursery stock, and turf. The value and acres of the ornamental plant subcommodities are presented in Table 1.

Table 1. Wholesale value of ornamental subcommodity sales and acres in production during 1993.

Subcommodity / production area	Sales ($million)
Potted flowering plants	74.3
Potted foliage plants	301.9
Bedding plants / garden plants	84.1

Basic and applied research is needed to develop new technologies and biorational strategies that increase profitability while minimizing the environmental impact from urban agriculture. The aesthetic , functional and economic impact of ornamental plants in our working and living environment have a profound positive impact on the quality of life for all Floridians and the millions of tourists who visit here each year.

Programs and Projects:

Smith-Lever - FL105
Smith-Lever - FL112
Smith-Lever - FL116
Smith-Lever - FL127

Performance Goals:

I. Improve Life Quality by developing sustainable ornamental plant systems.

Key Program Components:

I. Nursery and Landscape: Conduct applied and basic research on ecological physiology of landscape plants, economically efficient and environmentally sustainable landscape plant production practices, and landscape plant establishment and maintenance.
II. Greenhouse Crops: Develop production alternatives that reduce non-sustainable inputs (i.e. chemicals, energy, peat, etc.) used in the greenhouse industry; conduct research on alternative root substrates using waste products (i.e. composted animal wastes), manipulation of the substrate environment, and the development of biological and cultural methods of controlling soil-borne fungal pathogens to reduce chemical fungicide usage.
III. Turfgrass: Adapt grass species and cultivars to Florida conditions; amend sand-based systems to improve growing conditions, minimize fertility and pesticide input, and increase surface stability; develop environmentally sound alternatives to synthetic pesticides; develop traffic-tolerant grass systems for use on golf courses and athletic field areas; enhance germplasm for improving turfgrass response to biotic stress, including the use of tissue culture and genetic modifications.

Internal and External Linkages:
Ag. And Biol. Engineering
City and County Governments
City Parks
County Fair-Boards
Florida Department of Ag. And Consumer Services
Florida Department of Agriculture and Consumer Services
Florida Department of Environmental Protection
Florida Golf Course Superintendents Association
Florida Nurserymen and Growers Association
Florida Turfgrass Association
Food and Resource Economics
Golf Course Superintendents Association of America
Jacksonville's HUD
Police Departments
Southern Nursery Association
The United States Golf Association.
Water Management Districts

Target Audiences:

I. Commercial container nurseries.
II. individual segments of the industry that produce and maintain turfgrass. These include but are not necessarily limited to sod producers, those who plant and maintain golf courses, playing fields, parks, malls, and other public "lawns", those who plant and maintain residential lawns professionally, and laymen who choose to plant and maintain their own lawns.
III. Low-income, disadvantaged families/individuals

Evaluation Framework:

I. Cooperative extension personnel in ten counties will wurvey clientele annually to determine which efficient irrigation and nutritional management practices have been implemented and to determine the amount of water and fertilizer saved. Reductions in fertilizer and water use will be equated to dollars saved.
II. Evaluation of the program will be based on the degree of accomplishment of the specific objectives of FL 116.
III. Impact is evaluated in Jacksonville annually via a survey of all Urban Gardening participants. Surveys are also a part of the evaluation process in other counties, usually conducted in conjunction with spring and fall gardening meetings, with the assistance of Master Gardeners.

Output Indicators:

Extension:

Iς. Number of Individual Consultations
ς. Number of Group Learning Experiences
ςI. Number participating in Group Learning Experiences
ςII. Number of Educational Materials Prepared

Research

I. Better selection of root zone materials to reduce plant disease treatment.
II. Improved plant production practices to reduce cost and increase profitability.
III. Greater understanding of plant adaptability that leads to new plant materials and management techniques.

Outcome Indicators:

I. Reduced dependence on fertilizers and pesticides through improved plant development.
II. Qualitative improvements in the landscape through improved plant systems.
III. Development of natural pesticides that reduce environmental risk.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Educational Programs and Seminars
Irrigation management programs
Newsletters
Nursery IPM Demonstration Programs
Nutrient and best management program
On-Farm Pest Biology Studies
Personal Consultations
Scout Training Programs
Seminars and Presentations on Nursery Pest Management
TV Programs

Program Need 8: Improved Grazing Systems in Animal Production

Statement of Issue:
Profitability and competitiveness in animal production depend on its ability to control costs per unit of output and to use the highest quality and most efficient nutrients to reach this goal. Forage produced in Florida is the major source of nutrition that drives the beef cattle industry and to a large extent the dairy industry in Florida. Lack of adequate nutrition is one of the major problems in the beef industry for most classes of beef animals. Cows may fail to re-breed, replacement heifers may develop too slowly and also have trouble re-breeding after their first calf, and weaning weights of calves may be lower than their potential--all due to an inadequate supply of forage of acceptable quality. At the present time, interest is increasing in the use of certain legumes (to increase pasture quality and reduce energy/nitrogen input), in forage testing and in the adoption of new higher yielding, higher quality forage species. Ranchers need to optimize utilization of native range through proper range management practices such as burning, chopping, controlled grazing, and judicious use of feed supplements during the winter. Unfortunately, at this time, beef calf prices are low and are expected to remain low for the next three years. At the same time, the cost of fertilizer and other inputs for a beef enterprise have increased. Increased efficiency in the use of fertilizer and other production inputs will be needed. Within the next few years, some improvement (5%) may be realized due to improvement in forage programs. Some dairymen are using silage either purchased or homegrown. Several are growing and using low-energy grass silage. It is also projected that more dairies (90%) will be growing and harvesting some type of forage crop due to the need to control or recycle the nutrients in manure. Due to low milk prices and high grain prices, some "grazing dairies" will be developed whereby the producer significantly increases the use of pasture as a source of feed (nutrients) for the milking

herd. A small increase in the number of dairies (5%) planting improved, high-quality forage for dairy replacement heifers is expected.

Programs and Projects :
Smith-Lever - FL102
Hatch - 3199

Performance Goals:
Efforts are targeted to livestock producers and the public.

I. Enhance forage production and grazing practices to increase efficiency of animal and growth and production
II. Enhance understanding of the role of forage utilization and sustainable grazing systems in environmentally friendly approaches to cattle production.

Key Program Components:

I. Develop and evaluate concepts and systems that increase the uniformity of the year-round forage supply and the efficacy of forage, animal and grazing management to improve the profitability of beef production. Specific objectives are to:
II. Quantify production and economic impacts, including risk, of beef cow-calf systems that better match animal nutrient requirements to the quantity and nutritional value of the forage supply.
III. Improve the profitability and productivity of cow-calf systems by identifying alternative forage species and grazing management to extend the length of the grazing season.
Iç. Develop strategies for using forage legumes to improve the agronomic, animal performance, environmental, and economic characteristics of forage-beef systems.
ç. Develop a systems-based educational program on integrated forage/cattle management systems for cow-calf producers in the four-state region.

Internal and External Linkages:

External: USDA/ ARS, USDA/ NRCS, USDA/Farm Service Agency, American Soc. Of Agronomy, American Forage and Grassland Society, Southern Pasture and Forage Crop Improvement Conference, International Grassland Society, Farm Bureau, Fl. Cattlemen's Association.

Internal: Univ. of Fl. Animal Science Department, Dairy Science Dept., Entomology and Nematology Dept., Agricultural and Biological Engineering Dept., Ag. Education and Communication Dept., Food and Resource Economics Dept., Plant Pathology Dept., Soil and Water Science Dept., Wildlife Ecology and Conservation. Dept.

Target Audiences:

I. Beef producers, dairymen, and producers growing forages for sale to beef producers and dairymen, as well as others who use forages, plus related ag. industry representatives.

Evaluation Framework:

I. Acceptance of recommendations, efficiency of beef and dairy production, and increased use of forages measured through informal survey of county extension faculty annually and formal survey of extension customers every four years.

Output Indicators:

<u>Extension:</u>

II. Number of Individual Consultations
III. Number of Group Learning Experiences
Iç. Number participating in Group Learning Experiences
ç. Number of Educational Materials Prepared

<u>Research</u>

I. Better understanding of forage production systems.

II. Enhanced methods to define costs of producing cattle using forage-based systems.
III. Enhanced understanding of the role of plants and animals in food producing systems.
Iç. Development of forage-beef decision support software to enhance the ability of producers to evaluate and improve their own grazing systems.

Outcome Indicators:
I. New information defining the optimum interaction between animals and plants in grazing systems.
II. Reduced costs of producing beef using grazing systems.
III. Improved recommendations for forages to be used in grazing systems.
Iç. Greater public knowledge of the principles of forage production, a greater public appreciation for the role of grazing systems in protecting the environment, and enhanced appreciation for the role cattle have in harvesting and converting forages to quality meat for human consumption.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:

Program Need 9: Understanding the Physiological Basis of Animal Disease, Pest Reproduction, Growth and Well-being

Statement of Issue:
Florida is a cow - calf state that produces and ships over 500,000 calves each year to other states for growing and/or finishing. In the last four years there have been declines of 13, 29, 41 and 16% from the 1993 value of these calves. Much of this decline is the result of normal fluctuations caused by the cattle cycle - after a few years of profitability, numbers increase until there is an oversupply, profitability is lost and then numbers decline and the cycle starts over. The normal decline in prices, which started in 1994, was exacerbated in 1995 by a short feed grain crop resulting in a significant increase in the cost of feed grains and a corresponding decrease in calf prices. The consensus among forecasters is that calf prices will not begin to recover until 2000 or later. The time until recovery begins depends on how long it takes cattlemen to liquidate part of the cow herd and get production in line with profitable consumption levels. Another factor in the market value of beef cattle is the keen competition from pork and poultry for a share of the consumers protein dollar. Beef has lost some market share in recent years primarily due to the cost of beef
relative to its competitors. Other concerns have been product consistency, safety and quality. As a result, if beef is to maintain market share, we must improve safety, consistency and quality of our product while increasing production efficiency to lower the cost of production. Liquidation of part of the cow herd will help in the short run but if we are to remain competitive over the long term we must be more efficient and lower the cost of production. In doing this, we must remember that we are a calf producing state depending on other areas of the U.S. to grow, finish and slaughter the calves we produce. Each year, Florida ships approximately 500,000 feeder calves to the west and north. Texas, Oklahoma, Alabama, Kansas, and Georgia receive approximately 91% of the out shipments of our calves. Rounding out the top 10 states receiving feeder calves from Florida in 1997 were New Mexico, Mississippi, Colorado, Arkansas, and California with 7% of the total. These calves have another 150-300 days of growing and finishing before slaughter and are expected to perform in a predictable manner. They are expected to reach a desired weight and grade within a specified time. Anything that prevents these calves from performing in a predictable manner results in price "discounting" at purchase. The "best" feeder calves are only worth their market value. "Premiums" are not paid for calves; however, "discounts" are applied to calves that are perceived to be less desirable. To perform in a predictable manner, the calves purchased in loads of 50,000 lbs., must be UNIFORM, HEALTHY and REMAIN HEALTHY. The calves within the load must be of the same sex, similar in weight, age, frame size, and body condition; vaccinated for feed yard diseases; treated for parasites; over the stress of castration and dehorning; and know how to eat supplemental feeds. Based on a 1992 USDA survey, 88.5% of the Florida beef producers have less than 100 cows each and account for approximately 25% of the beef cows in Florida. Whereas, 75% of the Florida beef cattle are owned by

11.5% of the operators and are from herds of greater than 100 cows. Beef producers that have 100 or less cows will usually sell their calf crop through a local livestock auction market because of their inability to provide 50,000 lbs. of uniform calves at weaning time.

In contrast, the beef producer with over 500 cows has the ability to provide loads of uniform calves and can make private sales to buyers representing the western cattle feeders. The decision to market direct depends upon their contacts with the western buyers and the past performance of their calves in the western operations. A recent survey of 9 south Florida counties indicates that 85% of the producers are selling some calves at the local livestock auctions; a much higher percentage than expected in the large ranch area of south Florida. When a large number of calves are being sold through livestock auctions, the western feeders must depend upon order buyers to purchase calves and sort them for size, body condition, frame size, and sex before shipment west. The sorting does not take into consideration the need for uniformity in breeding nor the lack of health conditioning of the calves. This co-mingling of calves from numerous sources to achieve some degree of uniformity in the load usually results in compromising the health of the calves. Co-mingled calves are exposed to numerous stress related diseases at the market, during sorting, and during shipment. Improperly health conditioned calves are often sick on arrival, experience a high death loss, or require expensive treatments to survive. The reputation established by the co-mingled calves can result in price discounting at the markets and this perception can reduce the price of other Florida calves. To minimize discounting the Florida cow/calf producer must market loads of calves that will be predictable in performance at the western cattle operations. The loads of calves must be UNIFORM, HEALTHY and REMAIN HEALTHY.

The Florida cattleman can improve efficiency, lower costs and produce loads of calves that are UNIFORM, HEALTHY and will REMAIN HEALTHY by incorporating into the cow/calf operation cost effective practices from the following areas:

A. Herd management

1. Reproductive Management Practices:

- Defined breeding seasons of 120 days or less
- Selection of herd sires and replacement heifers
- Estrus synchronization
- Artificial insemination
- Pregnancy examination and culling
- Bull breeding soundness examination

2. Nutritional Management for:

- Heifer development
- Cow body condition
- Cow age considerations
- Weaned calves
- Bull maintenance

3. Herd Health program for the breeding herd:

- Appropriate timing of health practices in relation to production cycle
- Vaccination of the breeding herd using appropriate vaccines
- Use recommended vaccination sites and techniques
- External and internal parasite control
- Supply appropriate nutritional (including complete mineral) supplements

4. Genetic Management:

- Use bull with above average EPD's for traits of "economic" importance
- Capture the benefits of heterosis through planned cross-breeding

B. Marketing Management

Appropriate feeder cattle vaccination program following beef quality assurance guidelines
Castration, dehorning, implanting, and spaying prior to weaning
Examine marketing alternatives including cooperative marketing of loads of calves
Weaning of calves and teaching them to eat from a bunk and drink from a water tank
Exposure to a complete mineral supplement

Currently, Florida cattle producers have many influences on their decision making. They are influenced by peer groups, county Extension faculty, Extension specialists, practicing veterinarians, livestock auction owners, animal health distributors, feed store personnel, state and federal regulatory personnel, and manufacturing representatives, all of which can be categorized into the "allied industries." A major problem has been that each group of the allied industry (or each person in the allied industry) is advising the producers without regard to the total management of the cattle operation; each expressing a different opinion. This has resulted in some Florida cattle producers being totally confused as to the direction the industry is going and what additions are needed in management.

C. Major obstacles to the adoption of these practices are:
Producers lack of knowledge and motivation concerning the need for efficiently producing loads of calves that are uniform, healthy and will remain healthy.
Inconsistencies in information provided by the allied industries.
Allied industry selling a product rather than an integrated management program.
The eradication of brucellosis from Florida.

D. Economic impacts needed:
Lower unit cost of production
Evaluate unit cost of production locally, regionally, and nationally through the use of tools such as SPA
Florida has 278 commercial dairy herds. These average 585 cows, 14 employees, and $1.42 million in gross income. Managers face problems in attaining optimum performance and efficiency in the areas of feeding, reproduction, disease control, and others due to heat stress, congestion of cattle and other management challenges. Recent attention to potential movement of nutrients from dairies into private and public water supplies has given rise to new waste control regulations which producers must face. Increased dollars are required to meet these waste control regulations. Prices received for milk are expected to be lower than during the previous three years. Dairymen will need to continue to implement new technology and sound management practices in order to be efficient and profitable. This major program will attempt to provide educational leadership and assistance in these areas.

Programs and Projects:
Hatch -3247
Hatch -3410
Hatch -3249
Hatch -3477
CSRS -3474
CSRS -3567
CSRS -3580
CSRS -3728
CSRS -3742
CSRS -3391
CSRS -3538
RRF -3592
RRF -3651
RRF -3337

Performance Goals:

I. Alter production methods to increase reproductive efficiency and animal well-being
II. Enhance public understanding of the concepts of animal well-being and physiological basis for animal growth, reproduction and behavior.

Key Program Components:

I. Determine genetic, neuronal and hormonal mechanisms that enhance reproductive efficiency.
II. Elucidate properties of muscle cytoskeleton to improve muscle growth and meat quality.
III. Evaluate nutritional, hormonal and neuronal factors that regulate growth and performance.
Iς. Study the physiological impact of reproduction practices on stress, health, performance and well-being of animals.
ς. Apply newly developed knowledge of physiology to optimize production efficiency.

Internal and External Linkages:
See section III. Tables

Target Audiences:

ςI. Beef producers, dairymen, and other producers involved in genetics, and reproduction; plus related ag. industry representatives.

Evaluation Framework:
Formal evaluation research process

Output Indicators:
Extension:

ςII. Number of Individual Consultations
ςIII. Number of Group Learning Experiences
IΞ. Number participating in Group Learning Experiences
Ξ. Number of Educational Materials Prepared

Research

I. Better understanding of the physiological basis for reproduction and growth of food animals.

Outcome Indicators:

I. Improved efficiency of reproduction and growth of animals and improved conditions for growth and well-being of animals.
II. Greater public understanding of the principles of animal behavior, animal responses to their environment, and the biology of reproduction and growth.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
N/A

Program Need 10: Genetic Enhancement of Agriculturally Important Animals

Statement of Issue:
The selection of breeding stock based upon quantitative genetic analysis and the prediction of breeding values technology is not a mature science as advances in mathematical and statistical theory and computing systems continue to allow animal breeders the opportunity to work with ever more sophisticated models and estimation procedures. The quality, consistency, healthfulness and efficiency in which animal products are produced are under a significant amount of genetic control and, as such, investigative and descriptive genetic research projects must continue to be a high priority. The impact of this research will

be increased efficiency for producers, better understanding of biology for researchers, and improved food products for consumers. Other genetic improvements could decrease animal susceptibility to some diseases well as permit the rapid improvement of economically important livestock traits especially in the areas of disease resistance and /or reproductive success. As such, gene transfer serves as a potentially useful supplementary approach to classical animal breeding methods for animal improvement. In a society that does not always accept new procedures such as genetic engineering, a strong extension outreach program explaining the positive implications is natural continuation following research.

Programs and Projects: No programs presently in this need area, but several are expected to begin research within the 5 year plan of work period.

Performance Goals:

I. Alter genetic selection practices to increase efficiency of growth and production of meat, milk, and eggs
II. Enhance public understanding of the concepts of animal genetics and the role of molecular genetics in improving the quality and efficiency of producing foods of animal origin

Key Program Components:

I. Develop and test, by statistical approaches and animal selection, optimal selection and mating systems for genetic improvement.
II. Enhance immune response and disease resistance by genetic selection.
III. Identify and map genes associated with important economic traits and use them to genetically modify animals through marker-assisted selection or gene transfer.

Internal and External Linkages:
See section III. Tables

Target Audiences:

Evaluation Framework:

Output Indicators:
Extension:

Iς. Number of Individual Consultations
ς. Number of Group Learning Experiences
ςI. Number participating in Group Learning Experiences
ςII. Number of Educational Materials Prepared

Research

I. Better understanding of the genetic basis for animal selection.
II. Enhanced methods to select for disease resistance among animals.
III. Enhanced methods for use of genetic markers when making selection decisions.

Outcome Indicators:

I. Improved tools and strategies for selection of superior breeding stock.
II. Improved disease resistance among animals.
III. New methods for selecting breeding stock based on genetic markers and related information derived from characterization of the animal.
Iς. Greater public understanding of the principles of animal genetics, the contributions being made by research in molecular genetics, and the role of genetics research in improving the quality and consistency of foods produced by animals.

Allocated Resources:
N/A

Education and Outreach Programs:
N/A

Program Need 11: Aquaculture

Statement of Issue:
Aquaculture has become a major component of agriculture in many southern states, and is rapidly growing in importance in Florida ($35 million in 1987 [1988 DACS Survey], $54 million in 1991 [1992 DACS Survey], and $73 million in 1993 [1994 DACS Survey]). The existing industry needs new information on fish reproduction, genetics, nutrition, aquatic medicine, water quality, aquatic weed control, production systems, marketing, transportation methods and permitting in order to continue to grow and be competitive both nationally and internationally. Much new interest lies in the area of marine aquaculture. Potential investors and funding agencies need to be provided with unbiased information upon which to base their decisions.

Freshwater recreational fishing in Florida is estimated to be worth $2.4 billion. Many privately owned ponds and lakes exist; however, their fishery resource potential is underdeveloped. Many sites exist where aquaculture and recreational fishing ponds and lakes could be a productive alternative land use. Realistic opportunities also exist for utilization of existing ponds for aquaculture, fee fishing, sportfishing, and recreation (of direct or indirect economic value to the pond owner), and integration of aquaculture/fisheries with agriculture. Realizing this potential will allow private landowners to better utilize ponds and lakes as productive components of farms, or as enhanced recreational fishing resources with associated economic benefits.
Florida's rapidly growing population (900 people per day), which for the most part is located on or near water, has the potential to negatively impact aquatic systems. Floridians, both young (4-H) and old, also need to be informed as to how these systems function and how their activities interact with these systems. By having such knowledge, Floridians will hopefully have a greater appreciation and understanding of their environment, and will change their activities to minimize any negative impact of their actions on aquatic systems.

Programs and Projects:

Performance Goals:

Key Program Components:

Internal and External Linkages:

Target Audiences:

Evaluation Framework:

Output Indicators:
<u>Extension:</u>
ς. Number of Individual Consultations
ςI. Number of Group Learning Experiences
ςII. Number participating in Group Learning Experiences
ςIII. Number of Educational Materials Prepared

<u>Research</u>

Outcome Indicators:

Allocated Resources:

N/A
Education and Outreach Programs:
N/A

Program Need 12: Develop and Integrate Nutritional knowledge to Enhance Animal Production

Statement of Issue:
An increasing world population competing with animals for space and finite quantities of food, air, and water results in a continuing drive to increase the biological capacity and efficiency of animals to produce food, pharmaceuticals, clothing, and pleasure. Intensive management of animals with high capacities for productivity requires elucidation of factors regulating key biological processes, precise quantification of the nutrients required to support these processes, development and evaluation of novel feedstuffs tailored to animal needs, and greater awareness of the impact of animal production on the environment, quality, and wholesomeness of animal-derived foods (e.g., meat, milk and eggs). Increased knowledge of microconstituents of plants, feedstuffs, and animals and their possible regulatory role in function of cells and tissues are needed to enhance animal production. Similarly, the ideal composition of animal-derived foods that promote human health can be developed as a means to increase the value of foods from animals. Evaluation of the plant-animal interface in intensive grazing systems and animal production in more extensive production systems to better utilize forages and grasslands for food production is needed. As society becomes more dependent on renewable sources of carbon, coordination of animal production with crop processing provides opportunities to recycle plant nutrients back to the land and to develop crops with characteristics beneficial to processing and to livestock in a conjoint system. Achievement of these goals will assure viable livestock and poultry industries that continue to contribute to societal demands for a wholesome, nutritious, and inexpensive food supply and a healthful, aesthetic environment.

Programs and Projects:
Hatch -3159
Hatch -3178
CSRS -3363

Performance Goals:
I. Alter nutritional practices to increase efficiency of growth and production of meat, milk and eggs
II. Enhance public understanding of the concepts of animal growth and the role of animal nutrition in improving the quality and efficiency of producing foods of animal origin

Key Program Components:
I. Elucidate the bioregulatory roles of nutrition and cell signaling compounds on performance of animals.
II. Quantify the dietary nutrient requirements of animals.
III. Enhance nutritional value and consumer demand for animal products.
Iς. Identify, develop, and evaluate novel nutrient sources for animal production.
ς. Develop nutritional regimens to enhance the environmental integrity of animal production.

Internal and External Linkages:
See section III. Tables

Target Audiences:

Evaluation Framework:
Formal evaluation at the completion of the research

Output Indicators:
Extension:
ςI. Number of Individual Consultations
ςII. Number of Group Learning Experiences

çIII. Number participating in Group Learning Experiences
IΞ. Number of Educational Materials Prepared

Research
I. Better understanding of the nutritional basis for animal growth.
II. Enhanced methods to define nutrient needs of animals.
III. Enhanced understanding of the role of plants and animals in food producing systems.
Iç. New information defining the role of nutrition in growth of animals.

Outcome Indicators:
I. Superior recommendations for nutrient composition of diets for animals.
II. Improved nutrient quality and consistency of foods of animal origin.
III. Improved environmental quality near livestock production units.
Iç. Greater public knowledge of the principles of animal growth, the contributions being made by research in animal nutrition, and the role of animal nutrition research in improving the quality and consistency of foods produced by animals.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
N/A

Program Need 13: Potential of Alternative Livestock for Florida's Economic Enhancement

Statement of Issue:
Small farms and Alternative Livestock
We define small farms as (1) farms of 50 acres or less and/or (2) farms with gross sales of less than $50,000 and/or (3) farms where the primary farm operator's principal source of income is from non-farm activities. In 1992, farms with sales of less than $50,000 accounted for 79.1% of all farms in Florida. According to the 1987 agricultural census, there were 20,646 farms of 50 or fewer acres in the state, 29,487 farms with gross sales of less than $50,000, and 20,735 farms where the principal source of income came from non-farm activities. These farms represented 56%, 81%, and 57% of all farms in the state, respectively. In some counties, even higher percentages of all farmers fall in these categories. In Volusia County in 1987, for example, 71% of all farms were of 50 acres or less. In Hernando County, 91% of all farms had gross sales of less than $50,000. In Bradford County, non-farm income was the primary source of financial resources for 66% of all farms. The number of small farms has increased for each of the last four periods covered by agricultural censuses. The kind of small farm described above, although accounting for only 4.4% of the value of agricultural products sold in Florida in 1992, does account for the majority of the state's farm population.

Previous Extension programming has tended to focus on improving farm income for small farmers. While an important goal and one that will be addressed by this state major program, this clientele's objectives extend beyond economic goals. Farming for this clientele is often a lifestyle choice, and economic considerations may be of secondary importance. The economic goals that these farmers have are often different from those of larger farmers. Rather than seeking to maximize profit, for example, these farmers may be seeking agricultural enterprises that will allow them to meet fairly minimal economic goals. These goals might be, for example, (1) not losing any of the money that they invest in the farm operation, (2) maintaining the tax advantages from having a farming operation, and (3) being able to maintain a rural way of life.

These farms are extremely diverse and they are looking for production alternatives to increase diversification even more, and especially for alternatives that will stabilize and increase farm income. With these alternative enterprises there is an increased need for management skills, as well as increased financial

risk associated with some alternatives. UF/IFAS will provide educational programs that help this small farm clientele. One-on-one approaches will not permit Extension's human and fiscal resources to achieve these multiple goals. We have neither the human nor the fiscal resources needed to provide information to thousands of small farmers in a one-on-one basis. At the same time, this small farm clientele includes many farmers who are relatively well educated, accustomed to assuming leadership roles in organizational settings, and capable of working in a group framework to acquire information, exchange experience, and solve problems. Our program is designed to build upon these skills of much of the clientele, therefore allowing Extension to increase the flow of information to and between small farmers in the state. We will facilitate the development of local farmer groups and test the utility of alternative approaches to information dissemination, such as electronic networking and farmer-to-farmer training programs. We will work with Extension programs in such areas as leadership development to help achieve our objectives.

There are other important reasons for working with these farmers. They can play a critical role in natural resource management, environmental protection and enhancement, and community development in Florida. As the state's urban population increases, there is a tendency for land to move from agricultural to urban land use. This change in land use can result in decreasing environmental quality due to, for example, loss of biodiversity and decreased recharge areas for the state's aquifers. Small farmers help maintain land in agricultural land use. By finding innovative new enterprises for these farms, such as the development of woodlots based on native species, Extension can enhance the role that small farms play in maintaining environmental quality for all Floridians. With these alternative enterprises there is an increased need for management skills as well as increased financial risk in some cases. Again, we will interact closely with other Extension programs, such as the Forest Stewardship program, to meet these goals that are important to all of Florida's citizens.

Programs and Projects:
FL 261

Performance Goals:

I. Enhancement of rural and urban economics through private alternative livestock operations
II. Identification and Improvement of animal cultural husbandry techniques suitable for Florida
III. Reduction of environmental pollution from cultural operations
Iς. Increased producer technical knowledge and management skills
ς. Expansion of the market of Florida products
ςI. Assistance to state agencies which are involved in fish and non-traditional livestock culture and regulations, environmental protection, and economic development

Key Program Components:

I. Evaluate nutritional and physical environmental factors that influence growth and performance of fishes used in intensive aquaculture operations.
II. Evaluate various fish species to determine those best for the climate.
III. Determine plant and animal by-product substitutes for fishmeal to formulate fish feeds with lower pollution potential.
Iς. Manipulate nutrients to enhance fish culture pond productivity.
ς. Provide publications, WWW sites, and workshops to increase knowledge of producers and the general public.
ςI. Conduct on-site evaluations and recommendations for improving cultural and husbandry operations.
ςII. Provide coordination services for state commodity organizations and agricultural and natural resources agencies.

Internal and External Linkages:

Target Audiences:
Small farm owners

Evaluation Framework:

I. Post-meeting survey of perceived impact of content
II. Indicators of improved understanding of subject matter
III. Herd performance data will be used to quantitate changes in goat performance. Surveys of feeding and management practices will indicate changes in business management philosophy.

Output Indicators:

Extension:

Iς. Number of Individual Consultations
ς. Number of Group Learning Experiences
çI. Number participating in Group Learning Experiences
çII. Number of Educational Materials Prepared

Research

I. Research reports to the scientific community, technical reports and workshops for active producers, interpreted information for potential producers, the general public and schools, and cooperative services to state agencies.

Outcome Indicators:

I. Increase in the number of producers and/or producer profits.
II. Adoption of cultural and husbandry practices recommended through the project.
III. Improved growth and health of cultured animals.
Iς. Greater utilization of agricultural products for animal feed.
ς. Reduced water pollution attributed to aquacultural operations.
çI. Greater participation of producers in trade associations and educational programs.
çII. Increased product sales.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Goat workshops for small farmers

Program Need 14: Economic Competitiveness

Statement of Issue:
Overall:
Many Florida agricultural producers in all commodity sectors struggle to remain competitive. The challenges are many, including conventional problems with pests, disease and weather. The 1990s introduced two new concerns with competitiveness: international trade and governmental regulatory policy. The consequence of these issues is that market volatility increases, borrowing becomes more difficult, complying with rules and regulations becomes more tedious, costly and perplexing. Producers, governmental representatives and Extension professionals need a better understanding of these issues to help cope with rapidly changing agricultural and policy conditions. They need timely information on global and national marketing conditions that affect their competitiveness, including the trade and other policy issues that define the setting for Florida markets.

Dairy:
Financial stress in the Florida dairy industry is acute. This was caused by declining net milk prices for the past five years, exceptionally high feed prices, and low values for culled animals. National politics, structural change in the dairy industry, and milk marketing realities will likely keep downward pressure on milk prices paid to Florida producers in the future.

There is likely a large variation in the financial condition of Florida dairies. Through lack of economic information, many bad economic decisions have been made exacerbating financial problems caused by market price pressures. For those who want to remain and be competitive in the future, assessing comparative performance and identifying potential areas of improvement is critical. Data have been collected in the past, but these efforts have not continued, have not covered a large number of dairies in the state, or have not led to activities which have focused help back to dairymen to reduce the costs of production. Continuous financial monitoring and evaluation can provide the information necessary to enhance producers' ability to control costs of production over the long term so they can remain competitive selling milk into local markets.

There is a need to document the cost of producing milk in Florida and how it's affected by the climate's effects on milk production, reproduction, culling rates, replacements, and feed sources. Feed costs are significantly higher in Florida (about $1.00/cwt. milk produced) than in other regions, and this is due to the difficulty in growing high quality forages, which leads to greater dependency on purchased commodities which have to be shipped significant distances to Florida. Florida dairies have a tremendous feed price risk exposure because the amount of purchased feed stuffs and the distance from the sources. When milk and feed price both move in the wrong direction, the financial effects can be devastating with little opportunity to adjust. These situations may warrant buffering by longer term milk price agreements.

Until production costs are documented continually, programs and efforts aimed at improving the profitability of producing milk in Florida, at both the producer and industry levels, are hopeless. This is because the value of research, management changes, new technology, new regulations, and milk price levels are unknown. Virtually every effort targeted at improving the profitability of producing milk in Florida requires having valid and uniformly collected data on the various costs of production. All discussions about milk marketing and structural changes in the Southeast dairy industry largely depend on discussions of cost of production.

One frustrating aspect of the milk price situation is establishing the value of a supply of locally produced fresh milk to processors and understanding the true cost of producing milk in Florida. Although ultimately the Florida industry must produce milk on a cost competitive basis with respect to other regions when transportation into Florida is accounted for, it is important to know what prices need to be paid to sustain local Florida production at any point in time. This may be in the long run interest of processors.

Florida dairymen can compete on a price basis supplying local processors if they are competing on the basis of actually long term costs of production, handling and shipping. Sustainability of milk production in long term depends on covering all costs of production, including some return to invested assets. In the short term, variable costs must be met.

Some price stability around the real long term cost level is justified given necessary capital investments and alternative opportunities for the value of these assets. This would also help to reduce some of the risk unique to Florida fluid milk production from feed commodity price contracts when a short term supply of cheap milk is available, which is sold at a loss while replacing Florida production is destructive to the production over the long term. Currently, milk price fluctuations in Florida are driven by cheese markets in the Upper Midwest where 20% of the milk is used for Class I products. This indicates different market realities.

Thus, there is a need to:

Develop procedures for valuing Florida produced milk that will aid marketing cooperatives and processors arrive at a negotiated price satisfactory to both parties. The price should be competitive with respect to long term procurement opportunities for processors. It should also be reasonable given the realities of producing milk in Florida and the real value to processors of having a local supply of fresh milk. This should be done by assessing the marginal value of Florida produced milk based on sources of supply, handling and processing points, market demand for fluid milk, and transportation costs. These

procedures will also be valuable for determining the impact of federal policy changes on the Florida dairy industry.

Initiate a statewide service to record and evaluate financial data continuously:

A. provide individual dairymen with standards to measure their financial performance, identify areas for improvement, and mobilize expertise in areas where costs can be lowered,
B. document production costs to assess the cost competitiveness of the Florida dairy industry and provide information for decision makers in pricing milk.

Programs and Projects:
Smith-Lever - FL103
Smith-Lever - FL104
Smith-Lever - FL117
Smith-Lever - FL120
Smith-Lever - FL128
Hatch - 3411

Performance Goals:

I. Conduct research and educational programs on the international competitiveness of Florida and U.S. producers, the impacts of trade barriers, regulations, incentives, disincentives, and agreements on the competitive position of domestic products

Key Program Components:

I. Evaluate the competitiveness of Florida and U.S. producers in international markets for crop and livestock products.
II. Identify major factors affecting the international competitiveness of Florida and U.S. producers.
III. Identify domestic and international policy practices that would increase the competitiveness of domestic producers.
Iç. Assess the role of research and development and the associated adoption of new technologies in maintaining and improving the competitive position of Florida and U.S. producers.
ç. Analyze the role of exchange rates and international financial crises on export growth and long-run export market stability.

Internal and External Linkages:
American Association of Bovine Practitioners
American Dairy Science Association
Dairy Farmers Incorporated
Dairy Records Processing Center, Raleigh
Dairy Shrine
Farm Credit Services
Florida Brown Swiss Breeders Association
Florida Dairy Herd Improvement Association
Florida Farm Bureau
Florida Holstein Association
Florida Jersey Cattle Club
Florida Purebred Dairy Cattle Club
Florida Veterinary Medical Association
National DHIA
National Mastitis Council
South Florida Water Management District
Southeast Milk Cooperative
Suwannee River Water Management District

University of Florida Departments:

- Agricultural and Biological Engineering

- Agricultural Education and Communication
- Agronomy
- Food Science and Human Nutrition
- Soil and Water Science

County Extension Offices

USDA agencies:

- Environmental Protection Agency
- Agricultural Marketing Service
- Southeast Poultry Research Laboratory
- National Poultry Improvement Plan
- USDA/CSREES/PAS
- Food Safety and Inspection Service

Regional groups:

- Southeastern Poultry Extension group

State agencies:

- Florida Department of Agriculture and Consumer Services
- Florida Department of Environmental Protection
- Florida Farm Bureau

National and International Scientific societies

- Poultry Science Association
- World Poultry Science Association
- Southern Poultry Science Association

Commodity Associations

- North American Gamebird Association
- Florida Gamebird and Hunting Preserve Association
- Florida Poultry Federation
- National Chicken Council
- Poultry Water Quality Consortium
- US Poultry and Egg Association

3-A Sanitary Standards Committee
American Chemical Society
American Fresh Juice Council
California Strawberry Commission
Florida Assoc. of Milk, Food & Environmental Sanitarians (FAMFES)
Florida Beef Council
Florida Dairy Products Assoc. (FDPA)
Florida Dept. of Business & Professional Regulations
Florida Dept. of Citrus
Florida Dept. of Health
Florida Environmental Health Assoc. (FEHA)
Florida Gift Fruit Shippers Assoc.
Florida Grape Growers Assoc.
Florida Section IFT
Florida State Fair
Institute of Food Technologies (IFT)
International Assoc. of Milk, Food & Environment
International Dairy Foods Assoc.
Seafood Science & Technol. Soc.
Society for Manufacturing Engineers
Southeastern Food Processsors Assoc.
U.S. Food & Drug Administration
United Fresh Fresh Fruit & Vegetable Assoc.
USDA Food Safety & Inspection Service

Target Audiences:

I. Florida dairy farm owners, managers, employees and other dairy industry affiliates
II. The customers would include broiler production managers, broiler producers, egg production managers, egg producers, small flock owners, game bird producers, and ratite producers.
III. Farm producers, agricultural leaders, governmental agencies, public and private decision makers
Iς. Florida dairymen, their cooperatives, processors of Florida produced milk, and all related industry who support their organizations through the productivity of Florida dairymen.

Evaluation Framework:
ς. Post-meeting survey of perceived impact of content
ςI. Indicators of improved understanding of subject matter
ςII. Herd performance data will be used to quantitate changes in cow performance. Surveys of feeding and management practices will indicate changes in business management philosophy.
ςIII. We will evaluate our poultry Extension program by determining the percentage of operators adopting best management practices to increase profitability and/or to ensure sustainability.
IΞ. Validation and verification of transshipment mode. This documents whether the conceptual model is an accurate representation of the market factors valuing milk and whether the computer program performs as intended. Meet with 2 processors and 2 Florida marketing cooperatives in this process.
Ξ. Creation of uniform formats for collecting and reporting financial data from 20 dairies.
ΞI. Twenty dairies enrolled in financial recording.
ΞII. Summarization of financial data from 20 dairies.
ΞIII. Delivery of summarized financial data to Florida dairy industry by direct mailing to 20 participants, newsletter, and extension bulletin.
ΞIς. Five members of faculty trained for financial data collection.

Output Indicators:
Extension:
Ξς. Number of Individual Consultations
ΞςI. Number of Group Learning Experiences
ΞςII. Number participating in Group Learning Experiences
ΞςIII. Number of Educational Materials Prepared

Research
I. Greater understanding of the competitiveness of domestic producers.
II. Greater understanding of how competitiveness is impacted by domestic regulations and international trading practices and agreements.

Outcome Indicators:
I. Continuing competitiveness of U.S. producers.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:

1997 Florida Poultry Institute
1998 Florida Broiler Supervisors Workshop
1998Florida Poultry Institute
Beef/Forage Programs
Cattle Nutrition Programs
Citrus Production and Marketing Workshop
Dairy Production Conference
Field Day for Producers
In-service training

Internet access
Monthly Newsletter
North Florida Regulations Conference
Soil and Manure Testing
The Planned 1998 Egg Industry Complex Managers Workshop

Program Need 15: Agricultural Risk Management

Statement of Issue:
Production agriculture has entailed substantial risk related to price, production, weather, and financial factors. The new farm program legislation of 1996 shifted additional risk from the federal government to the farmer. Thus there is a growing need and demand for risk management tools and alternatives in the agricultural sector. Simultaneously, structural changes in agriculture are driving integration of the food supply chains in the sector. Associated with these changes are growing contractual relationships that may shift risk bearing but also may introduce additional risks. New risk management alternatives (including insurance programs and contractual arrangements) have been and are being developed. These alternatives provide farmers with new tools but also with complex decisions in selecting risk management tools and appropriate marketing strategies. To remain competitive in agriculture, Florida producers must manage their risk effectively and efficiently.

Programs and Projects:
Smith-Lever - FL119

Performance Goals:
I. Developing and evaluating new risk management tools and contractual relationships for producers to better deal with price, production, and revenue, and financial risks of agriculture in both the crop and livestock sectors

Key Program Components:
I. Create new risk management options and strategies.
II. Evaluate alternative risk management options in the context of the farm firm.
III. Develop marketing and risk management strategies suitable for representative farm situations, including crop vs. livestock, ability of farmer to handle risk, debt-to-asset situation, as well as related financial and resource circumstances.
Iς. Analyze contracting, incentive structures, and the farm firm.
ς. Provide "good practices" guidelines for contracting and contractual arrangements.

Internal and External Linkages:

Target Audiences:
I. Owners and managers of Florida's environmental horticultural enterprises include the following sub-sectors: cut foliage and flowers; woody ornamentals; foliage plants; cut ferns, lawn and garden center wholesale and retailers; golf courses; sod producers landscape maintenance organizations, landscape contractors, and lawn and garden product and equipment suppliers.

Evaluation Framework:
I. Program evaluation and assessment will be based on:
    Post evaluation of management workshop presentation content and usefulness.
    The number of program participants and the annual sales volume represented through industry surveys (4-6

months after each yearly management series) to determine the breadth and depth of knowledge gained and utilized the changed management practices and program impact upon organization performance.

Output Indicators:
Extension:

II. Number of Individual Consultations
III. Number of Group Learning Experiences
Iς. Number participating in Group Learning Experiences
ς. Number of Educational Materials Prepared

Research

I. New risk management strategies and programs.
II. Trade-off of contractual arrangements.
III. Information and software for evaluating risk management options.
Iς. Research publications and reports, and risk management education programs.

Outcome Indicators:

I. Adoption of appropriate risk management practices.
II. Stakeholders understanding of risk management principles.
III. Survival and success of producers and, to some extent, rural communities.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Business Analysis Program
Finding News Market Workshop
Horticulture Enterprise Management Strategies Training
Internet Web Site
Training for Prospective Nursery Managers

Program Need 16: Agricultural Information Technology
Statement of Issue:
The information revolution is having profound impacts on agriculture and the future of the sector. Information technology has the potential to cause dramatic alterations in the structure of agricultural production, marketing, processing, distribution, and consumption. Everything from precision farming to source identification to electronic markets will impact the sector. Even though information-based agriculture is being heralded as the future of agriculture, there are difficulties being encountered in the transition to the new information technologies. The adoption and widespread use of information technology in agriculture is constrained by a number of factors. First, many of the technologies are not yet profitable within current production systems. Second, producers lack objective information on new equipment, training on how to operate and use the information hardware, software, data systems, and decision tools, and the necessary private infrastructure for efficient operation of systems. Land Grant universities are being viewed as not providing the necessary supporting infrastructure in terms of teaching (information-based courses), research, and extension. Likewise, the private sector has not developed the necessary supporting infrastructure and training. Also, the information they provide is not always viewed as objective.

Programs and Projects :
Mc-State - 3555

Performance Goals:

I. Conduct agricultural information technology research and educational programs, which will enable Florida Agriculture to be competitive, profitable, and environmentally friendly

Key Program Components:
I. Design and develop data gathering and analytical methods.
II. Provide value-adding opportunities for grain and livestock products.
III. Create system of linkages for the food supply chain.
Iς. Provide of evaluation of economic, safety, and environmental impacts of information-based agriculture methods and technologies.
ς. Incorporate new knowledge into on- and off-campus learning experiences.

Internal and External Linkages:
See section III. Tables

Target Audiences:
Scientific community

Evaluation Framework:
Formal evaluation process at completion of research

Output Indicators:
Extension:
ςI. Number of Individual Consultations
ςII. Number of Group Learning Experiences
ςIII. Number participating in Group Learning Experiences
IΞ. Number of Educational Materials Prepared

Research
I. New data gathering and analytical methods.
II. Information, software, and systems for evaluating impacts of adapting new information technologies.

Outcome Indicators:
I. Increased ability of participants at all levels of the food chain to evaluate productivity, profitability, safety, and environmental impacts of adapting new information technologies.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
N/A

Program Need 17: Pest/Disease

Statement of Issue:
Protecting Florida's plants and animals from pest and disease is an important goal of the Florida land grant universities. In a tropical state that is an international destination for millions each year, research and extension must constantly be aware of the affects the many domestic pests and diseases are having on plants and animals as well as being concerned about possible foreign diseases and pests that often "catch a ride" into the state. Advanced research and education to offset any severe outbreaks of pests or disease that would affect Florida's economy or the well being of the citizens are the primary tools for reducing the effects of these constantly prevelant issues.

Programs and Projects :

Hatch - 3228
Hatch -3259
Hatch -3280
Hatch -3283
RFR3303
Hatch3304
Hatch3364
RRF3370
Hatch3402
Hatch3586
CSRS3535
CSRS3534
Hatch3524
Hatch3415
Hatch3419
CSRS3430
CSRS3431
CSRS3432
Hatch3442
CSRS3443
CSRS3486
RRF3490
RRF3493
Hatch3496
RRF3504
CSRS3581
CSRS3577
CSRS3610
Hatch3623
CSRS3626
CSRS3630
CSRS3634
CSRS3664
CSRS3731
CSRS3734
CSRS3739
CSRS3744
Hatch3754
CSRS3765
CSRS3780
CSRS3786
Hatch3386
CSRS3422
CSRS3472
Hatch3603
CSRS3738
Hatch3586

Performance Goals:

I. A reduction of the effects of pests and disease on the animal and plant industry
II. Improving our understanding of the effects of disease and pests on Florida's plants and animals

Key Program Components:

I. Create new pest and disease management options and strategies
II. Identify major factors leading to the infection of Florida plants and animals

III. Improve the profitability and productivity of plants and animal industry through the reduction of disease and pests

Internal and External Linkages:
See section III. Tables

Target Audiences:
I. Animal and plant industries; tourists and visitors to the state; general public; scientific community

Evaluation Framework:
I. Actual measures will be based on the implementation of TQA and HACCP program assuming a zero baseline as of June 1995 in Florida firms. Measures will include written programs, self-initiated or through regulatory compliance, and actual in-plant practices. Tallying will be based on the number of new participants per total licensed firms in Florida.

Output Indicators:
Extension:
II. Number of Individual Consultations
III. Number of Group Learning Experiences
Iς. Number participating in Group Learning Experiences
ς. Number of Educational Materials Prepared

Research

Outcome Indicators:

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
N/A

Program Need 18: Weed Management

Statement of Issue:
Agriculture is the second highest source of revenue in the state of Florida. Tropical climates, including ample rain and sunshine creating serious weed problems lead to a critical need for weed management. Environmental issues are also of primary concern since the soil and water tables are conducive to easy contamination of ground waters and the fragile aquifer system by improper use of chemical weed controls. Weeds can greatly reduce the yield of crops, and toxic weeds can be detrimental in the various animal industries. The need for research into the most effective and efficient use of weed management is an important critical need issue in the state of Florida. Extension education is also necessary to educate the public sector in identification of weeds and the best source of control.

Programs and Projects :
CSRS - 3329
Hatch - 3416
RRF - 3457
CSRS - 3650
RRF - 3748
Hatch - 3321
RRF - 3498
Hatch – 3620

Performance Goals:

ςI. Conduct agricultural weed management research and educational programs, which will enable Florida Agriculture to be competitive, profitable, and environmentally friendly

Key Program Components:
ςII. Create new weed management options and strategies
ςIII. Identify major factors leading to the control of a variety or weeds that affect the varied industries and public sector in the state of Florida
IΞ. Improve the profitability and productivity of plants and animal industry weed management

Internal and External Linkages:
See section III. Tables

Target Audiences:
Agricultural industries; public sector

Evaluation Framework:
Ξ. Actual measures will be based on the implementation of TQA and HACCP program assuming a zero baseline as of June 1995 in Florida firms. Measures will include written programs, self-initiated or through regulatory compliance, and actual in-plant practices. Tallying will be based on the number of new participants per total licensed firms in Florida.

Output Indicators:
Extension:
ΞI. Number of Individual Consultations
ΞII. Number of Group Learning Experiences
ΞIII. Number participating in Group Learning Experiences
ΞIς. Number of Educational Materials Prepared

Research

Outcome Indicators:

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Weed management workshops
Weed identification workshops

Goal 2: A safe and Secure Food and Fiber System

Program Need 19: Reduction of Physical, Chemical and Biological Negative Components Introduced into Human and Animal Foods.

Statement of Issue:
Never before have the importance and health attributes of food been the focus of public attention. Florida provides a substantial part of the nation's supply of fresh fruits and vegetables. Florida is also a provider of citrus juices to the nation and the world. Florida products must be affordable, and competitive with similar products exported from other countries for their benefits to be reaped. The state has capitalized on its being the winter garden of America by marketing products as Fresh from Florida. Florida also processes food, and is a major producer of processed (as well as fresh) fishery products.

The importance to the nation of an affordable, healthful, and culturally relevant food supply cannot be overstated. Food affects health. In the past, science has dwelled on the negative aspects of foods, such as the detrimental effects of high fat diets, putatively carcinogenic pesticide residues, and the contribution of diet to obesity, and chronic diseases such as diabetes. The past five years have experienced a dramatic change in scientific and medical thinking, and the way foods are portrayed to the public. Clinical studies by major medical centers are demonstrating the positive health attributes of food. Individual phytochemicals are being studied and shown to have therapeutic and prophylactic benefits for disease states such as various cancers and cardiovascular disease. For example, orange juice contains higher levels of the vitamin folic acid than other food sources. Folic acid has been shown to prevent neural tube defects in the developing fetus, and by adjusting intake of folic acid upward, devastating conditions such as spina bifida may be nearly eliminated.

Fresh fruits and vegetables are the sources of beneficial phytochemicals, as well as dietary fiber. Fiber plays a major role in preventing coronary artery disease and certain cancers such as colorectal cancer. Thus, an uninterrupted supply of fresh fruits and vegetables is an absolute necessity to assure the health of the nation. They are naturally healthful, but they must be affordable, available, and culturally relevant for their benefits to be realized. Without a safe and secure food and fiber system, the health of the nation, and the nation's economy, will suffer.

The benefits of food do not stop with fruits and vegetables, but extend to all foods. Florida is a major producer of beef cattle. The popular press portrayed beef as a "bad food" because of the concern about fat intake. Dairy products such as milk, butter and cheese suffered a similar fate. The populace drifted towards becoming a nation of "lipophobes," yet fatty acids are an important dietary component. As a result of press coverage, beef consumption plummeted to all time lows. Because of concerns about cholesterol, egg consumption also suffered dramatically. These important sources of protein and minerals are all legitimate components of a balanced diet, yet the public was not, and still is not getting that message. There is the opportunity, through teaching and extension, to positively affect the health of millions by educating the public about the attributes of a well balanced diet.

Currently, the two-edged sword of food still exists. People still portray some foods as good foods and some as bad foods. Some people can afford all foods that comprise a well-balanced diet, others cannot. Some people fear certain foods that may contain pesticide residues, and others because of the misconception that an individual component of food (e.g. fat) is harmful. Accessibility is an issue in certain regions of the nation, in others not. Also currently in question is the safety, that is the biological safety of the food supply. Outbreaks of food-borne illnesses have struck throughout the nation, and have been attributed to nearly all food commodities. Most recently, outbreaks of illness attributed to fresh fruits and vegetables have been the focus of press coverage. These incidents are highly publicized, and contribute to people avoiding foods that are of great benefit in the bigger picture of health. Food safety is a major national issue, as is the importation of foods from other countries that are perceived to have more lenient safety assurance systems than the United States. Those fears interrupt the accessibility of food, and as such, have an overall negative impact of health. We must also make provision for sub-populations with specific needs, some of which may be culturally related. Accessibility of ethnic foods is presently not universal across the nation, yet those foods are important components of the diet of many citizens. Florida for example, is a culturally diverse state, with relatively large Hispanic and African American populations, as well as a large number of elderly citizens.

The situation should and must change. Through teaching, research and extension, we have the tools to effect change. The goal should be to educate the populace about the value of foods to their health, and the attributes of a balanced diet. Research should, and largely is aimed at maintaining affordability and availability of food. Fears about food must be put in context with the overwhelming value of food to health, yet the problems that do exist must be addressed. The food supply is safe, but can and should be made safer, and that can be addressed through research, teaching and extension. Foods that are consumed by sub-populations such as ethnic foods should be equally safe, available and accessible to all who want them.

The challenges outlined above are addressed as part of the UF/IFAS mission. Extension efforts have been separated into "state major programs" that aim to educate or otherwise assist the consumer, and the producers of food from the farm gate to the table. These programs serve to focus efforts statewide, and encompass numerous partnerships, local, county, and state. Research is aimed at making food affordable and accessible by continually improving the yield and quality of foodstuffs grown or produced in Florida, and assuring their safety. Florida, owing to its unique climate, has many different problems than states to the north. Assuring affordability and accessibility often means overcoming climatic barriers. Research also encompasses the nutritional aspects of foods, with the aim of assuring their healthfulness for humans.

The target audience(s) for UF/IFAS are numerous. Using the county networks, UF/IFAS materials reach down to consumer, retail, processor, and production levels, and when appropriate, focus on subgroups such as high-risk populations, and pregnant women.

Extension's role in safeguarding the food supply has reached new levels, and will continue to be important to communicate important research-based information to consumers and the food industry. The general populace is a significant target audience, being affected by news media who raise food safety issues to a prominent level. Extension must provide the public with scientifically based information that can create a desirable balance with media reports. Extension is faced with the impact of new pathogens in the food supply, such as E. coli O157: H7 and cyclospora, which require development of new educational and training resources for consumers and industry, especially in the designation of Critical Control Points and development of HACCP systems.

Florida presents a unique environment for implementing food safety programs. Among US states, it ranks in the top 10 in food-borne illness. The state has diverse ethnic cultures and lifestyles, a large elderly population, and the second highest incidence of AIDS. Furthermore, estimates show that the age distribution and ethnic diversity in Florida reflect the composition of the U.S. population in the next decade. Although typical cases of illness are relatively mild and self-limiting, severe and chronic food-borne diseases occur for persons with compromised health. The population size of this high-risk group continues to increase in society as a result of the Acquired Immunodeficiency Syndrome (AIDS). New medical treatments that support chronically-ill patients but affect host defenses, an increasingly elderly population, and more foods provided through institutional food settings such as child care and elderly care. With these changes, food safety educational programs become an essential component of future efforts to reduce health risks for compromised persons.

Extension is also integral for assisting in the implementation of new food control systems, such as HACCP, that are designed to protect the food supply at processing and retail levels. These actions have resulted in a high demand for training by Extension, and will continue for HACCP regulations for meat and poultry, as well as produce. Such training efforts may need to reach over 50,000 food establishments in Florida, as well as its numerous food processors. The growing demand for year-round availability of foods has also resulted in importation of food from many countries, and different forms of food regulation. As a result, US customers have experienced new forms of food-borne disease not commonly experienced with U.S. grown foods, primarily produce products. Extension must be positioned to respond to these issues, such as how consumers and processors can reduce risks associated with imported foods.

UF/IFAS also has a huge constituency in our agricultural community, with research and education programs for our farmers, transporters, and processors of food. Our students are also a large audience, as knowledge is passed to the next generation relative to assuring affordability, accessibility, and safety of food. UF/IFAS audiences also include a national and international audience. Research results are transmitted world wide, and special programs between UF/IFAS and many countries assist those countries in assuring affordability, accessibility, and safety of foods grown and processed in their respective countries.

Applied research is generally developed through identification of a problem to be solved, or by the researcher's desire to improve an existing entity. Research in the area of Goal 2 will be further encouraged, and extension efforts will be further focused through the state major program structure. CRIS report coding

by Goal may be instituted. Marketing Goal 2 will be done within UF/IFAS by making faculty more aware of the Performance Plan in its entirety. Marketing outside UF/IFAS will be accomplished through our extension component.

To succeed in achieving the Goal, partnerships must be further improved. Florida enjoys an excellent partnering experience in all areas of effort. Collaboration with other institutions with similar problems to Florida's should be enhanced, and many opportunities exist. We need to continue to assure that our collaborations and linkages are complimentary to one another and avoid unnecessary duplication of effort. We also need to appreciate that all current efforts can be improved, and not be lulled into believing that the status quo is sufficient.

Programs and Projects :
Smith-Lever - FL109
Smith-Lever - FL110
Smith-Lever - FL312
CSRS - 3393
CSRS - 3559

Performance Goals:
I. A safe and secure food system
II. Improve our understanding of the hazards to a safe food supply

Key Program Components:
I. Study the impact of food constituents on chronic disease indices.
I. Design and develop data gathering and analytical methods.
II. Provide value-adding opportunities for grain and livestock products.
III. Create system of linkages for the food supply chain.
Iς. Provide of evaluation of economic, safety, and environmental impacts of information-based agriculture methods and technologies.
ς. Incorporate new knowledge into on- and off-campus learning experiences.

Internal and External Linkages:-A Sanitary Standards Committee
American Association of School Food Service
American Cancer Society
American Chemical Society
American Culinary Federation
American Fresh Juice Council
Americorps - Farm Share
California Strawberry Commission
Chefs Association
Child care
Churches
Collier County Department of Health
Collier County Public School System
Department of Children and Families
Dietary Managers
Environmental Protection Agency
Family and Community Educators
Florida Assoc. of Milk, Food & Environmental Sanitarians (FAMFES)
Florida Beef Council
Florida Dairy Products Assoc. (FDPA)
Florida Department of Agriculture and Consumer Services
Florida Department of Business and Professional Regulation

Florida Department of Elder Affairs
Florida Department of Health
Florida Dept. of Agri. & Consumer Service
Florida Dept. of Citrus
Florida Environmental Health Assoc. (FEHA)
Florida Gift Fruit Shippers Assoc.
Florida Grape Growers Assoc.
Florida Restaurant Association
Florida Section IFT
Florida State Fair
Food Technologists
Headstart
Holmes County Council on Aging
Institute of Food Technologists (IFT)
International Assoc. of Milk, Food & Environmental Sanitarians (IAMFES)
International Dairy Foods Assoc.
Marion County Health Department - Environmental Services
Naples Interagency Council
National Association of Family and Consumer Sciences
Osceola County Commissioners
Osceola County School Board
Palm Beach County Health Department
Palm beach County newspapers, radio and television media
PBC School Board
Restaurant Association
Seafood Science & Technol. Soc.
Society for Manufacturing Engineers
Southeastern Food Processors Assoc.
Tri-County Community Council, Inc. - social service agency serving Holmes, Washington, and Walton Counties
U. S. Food & Drug Admin.
United Fresh Fresh Fruit & Vegetable Assoc.
US Department of Agriculture
US FDA - "Fight BAC" South Florida Campaign.
US Food & Drug Association
USDA Agr. Marketing Service
USDA Food Safety & Inspection Service
Vo-tech schools
Washington County Council on Aging
WIC
USDA – Food Safety and Nutrition Education Grant
Southern Rural Development Center – Grant
Guam Cooperative Extension Service
Puerto Rico Cooperative Extension Service

Target Audiences:

I. Scientific community, food industry, students and the general public
II. commercial food handlers, consumers and associated regulatory agencies
III. Food processing and retail food industry representatives, trade and professional organizational leaders, local and state regulatory officials, and students in food and agriculture related disciplines.
Iç. Seafood and aquaculture producers, processors, retailer and food service operators, plus their respective county, state and federal regulatory authorities.

Evaluation Framework:

ς. Actual measures will be based on the implementation of TQA and HACCP program assuming a zero baseline as of June 1995 in Florida firms. Measures will include written programs, self-initiated or through regulatory compliance, and actual in-plant practices. Tallying will be based on the number of new participants per total licensed firms in Florida.

The state major program will be evaluated by:

I. The number of county programming efforts, number of program contacts increased utilization of HACCP, other quality control programs among Florida food industries measurements of changes in food safety knowledge, behavior among customers maintenance of linkages built and maintained with community, state, and federal organizations measurements of changes in understanding of food-borne risks from pesticides, environmental contaminants, and natural constituents.

II. Effectiveness of training efforts will be evaluated by the use of questionnaires and by developing pre-tests and post-tests. Effectiveness of county agent training efforts will be evaluated through reporting of their involvement with the food processing and retail food industries. Evaluation of in-plant pilot HACCP studies will be done by examining related process and laboratory records in the individual plans involved. Adoption of HACCP programs by members of the industrial sector, which participate in training, will be tracked semiannually from individual feedback.

I. Students involved in internship programs will be tracked upon graduation and entering the job market upon graduation. Effectiveness of the internship program on their professional development will be evaluated.

I. General economic evaluations will be conducted to determine the relative cost vs. benefit of food training efforts.

Output Indicators:

Extension:

I. Number of Individual Consultations

II. Number of Group Learning Experiences

III. Number participating in group learning experiences

Iς. Number of Educational materials prepared

Research

New and improved analytical methods

Greater understanding of chemical, physical, and biological hazards to food safety

Outcome Indicators:

Improvements in the overall safety of the food supply

Allocated Resources:

See section III. Tables

Education and Outreach Programs:

Safe Food Handling

Goal 3: A healthy, Well Nourished Population

Program Need 20: Improving Human Foods: Functionality, Selection and Nutrition

Statement of Issue:

Concern about nutrition, diet, and human health and the relationships among them has reached an all-time high among the people of Florida. Of the 10 leading causes of death due to disease, five are associated with diet: coronary heart disease, several types of cancer, stroke, diabetes mellitus, and atherosclerosis. Obesity, a risk factor in all leading causes of death, affects 30 percent of women, 15 percent of men, and 25 percent of adolescents, with the highest rates observed among low-income and minority groups. Health objectives

that relate specifically to improving nutrition and health are among national goals for the 21st century as expressed in Healthy People 2000: National Health Promotion and Disease Prevention Objectives.
Many groups are at increased risk for problems related to nutrition, diet and health. A disproportionate burden of diet-related disease is borne by minority, low-income, and educationally disadvantaged persons. Such populations have higher rates of high blood pressure, stroke, and diabetes mellitus than the general population. Most of these diseases also occur more frequently with advancing age. According to the latest available data, some 17.8 percent of Floridians live at or below the poverty level (1993), and this percentage has been increasing. In Florida 22.9 percent of the children live in poverty, compared to a national average of 20 percent. Florida ranks 39th in the nation. A growing number of Florida infants and young children are receiving WIC assistance. Other changes among Floridians which may increase their risks for diet related problems include increased numbers of mothers of young children in the labor force, single-parent households, homeless families with children, and high school drop-outs. At the same time the average age of the population is rising. Although many of Florida's older residents have moderate to adequate incomes, poverty rates among elderly women, as well as among children, are increasing.
In the midst of an abundant food supply, a significant proportion of the population continues to experience hunger, lacking food in sufficient quantity and quality for adequate nutrition. Hunger is increasingly perceived as a public policy issue involving millions of children who may carry the consequences of early deprivation into adulthood. By compromising children's powers of concentration at school, hunger can reduce their intellectual and academic achievements and thereby jeopardize their vocational futures as well.

Consumers want safe, inexpensive, good-tasting, nutritious food that is convenient to store and prepare. Manufacturers place thousands of new products on the market each year. Many new products contain reduced cholesterol, fat, calories, sugar, and sodium, or are enriched in fiber and nutrients such as calcium or vitamins. Such innovations, many of which are welcome, nevertheless involve increasingly complex choices and make consumers uncertain about how best to choose a healthful diet.

Economic situations also increase the complexity of making healthy nutrition choices. Many of the people who are affected have been recently thrust into poverty by unemployment or reduced employment through factors beyond their control such as plant or base closings, changes in laws and regulations, technological changes, natural disasters, etc.

According to USDA's Food and Consumer Service, one in six Americans currently uses some form of federally funded nutrition assistance. The lowest income group spent 11 percent more on food in 1993 than in 1992 according to the U.S. Department of Labor, Bureau of Labor Statistics. In 1993 spending on food rose about 3 percent in the U. S. Following an increase of less than 1 percent the prior year. Food at home expenditures rose 4 percent while food away from home rose 2 percent. In January, 1995 the cost of food at home for 1 week, for a family of two (20-50 years) following the thrifty plan was $53.60, the low-cost was $68.00, the moderate-cost was $81.30, and the liberal cost was $105.20. For a family of four with elementary school children the figures were $89.10, $114.60, $143.50, and $173.30 respectively (United States Department of Agriculture, Center for Nutrition Policy and Protection, issued February, 1995).
Such economic conditions and considerations require educational approaches that will enable Extension customers to develop food procurement practices for acquiring foods of the highest nutritional quality with reasonable considerations for convenience at the lowest cost.

Programs and Projects :
Smith-Lever - FL262
Hatch - 3322
RRF - 3456

Performance Goals:

I. Improve our understanding of the principles of ingredients and flavor of foods
II. Increase our understanding of human nutritional needs and nutrient metabolism
III. Develop strategies for improving the quality and nutritional value of consumer foods
Iç. Determine optimal dietary intakes for health maintenance and disease prevention

ς. Develop novel foods and food ingredients that will help prevent human disease and improve quality of life
ςI. Assess and optimize bioavailabilitity of dietary components
ςII. Improve tools for food survey and nutritional assessment
ςIII. Optimize market aspects of improved food products
IΞ. Develop strategies for effective nutrition education
Ξ. Improve our understanding of dietary and feeding choices

Key Program Components:
I. Research mechanisms of dietary prevention of disease.
II. Assess bioavailability and bioactivity of nutrients and non-nutrient constituents of foods.
III. Research detoxification of dietary toxicants.
Iς. Study the effects of processing on bioavailability and bioactivity of dietary constituents.
ς. Investigate the impact of social and economic factors on food choices.
ςI. Research to improve tools for assessment of dietary intake and nutritional status.
ςII. Study dietary and feeding habits associated with optimal growth.
ςIII. Research the educational programs that will effectively inform and fully educate people about all the related issues of food and nutrition.
IΞ. Assess the impact of food perceptions, acceptability of products, and marketing on sales.

Internal and External Linkages:
Florida 5-A-Day Partnership
Florida Association of Community Action
Florida Council on Aging
Florida Department of Agriculture and Consumer Services
Florida Department of Children and Families
Florida Department of Education, Food and Nutrition Resource Center
Florida Department of Elder Affairs
Florida Department of Health, WIC Program
Florida Interagency Food and Nutrition Committee
Florida School Health Consortium
Food and Drug Administration – District Office
Head Start
USDA Cooperative State Research, Education, and Extension Service

Target Audiences:
I. Single, female head-of-households, pregnant teens, homemakers, and older adults.
I. Individuals and families with limited resources to include female heads of households, children, youth, older adults, and homemakers.
II. food stamp recipients, individuals and families.
III. economically disadvantaged people who are at risk of hunger, food insecurity and poor nutrition. These audiences include youth, battered women, homeless persons, migrant workers, teen mothers, senior citizens, families with and without young children, various ethnic groups, persons with disabilities, people who are unable to find employment, and working people with low incomes who are eligible for or participate in the Food Stamp Program.
Iς. Working adults, particularly those at high risk for obesity, diabetes, cardiovascular disease, or cancer; these include ethnic minorities and persons with limited resources including the working poor. Families with limited access to health care delivery due to attitudinal or organizational barriers will be targeted.
ς. Limited-income persons who are responsible for planning and preparing the family's food with special emphasis on pregnant teens/women and households with infants and young children.
ςI. Middle-aged men and women, the elderly, the very young expectant or lactating mothers, limited resource families, parents and caregivers of infants and children, persons most vulnerable for food-

borne illnesses, policymakers, community leaders, coalitions of community groups, and human services agency personnel.

ςII. Health professionals

Evaluation Framework:

I. Determine the number of the targeted audience who have adopted beneficial nutritional and health practices through personal testimonies and pre- and post-tests (where appropriate).

I. Outcomes of the FNP intervention will be documented by the number of participants, the number of minorities represented, and a customer satisfaction survey of FNP participants. Future plans include a random phone survey to FNP participants to assess the extent of FNP impacts. Tools to assess behavior change are a food frequency questionnaire and food-related behavior checklist which will be administered pre- and post-intervention.

II. Appropriate evaluation instruments will be identified or developed for use in the specific programs. Where possible, instruments developed by the national food, nutrition, and health impact indicators task force will be utilized to facilitate the production of national reports. As appropriate, pre-, post- and/or follow-up tests, or pre-then-post tests will be utilized for specific programs. Collaborations with other government agencies will allow utilization of routinely collected data, e.g., infant birth weights, number of immunizations, and infant mortality rates as needed.

III. The EFNEP program prepares a federal report annually on the number of enrolled clients and selected indicators of their changes in dietary practices. The indicators reported include:

Percent of program participants with improved diets.

Percent of program participants with increased knowledge of the essentials of human nutrition.

Percent of program participants with increased ability to select and buy food that satisfies nutritional needs.

Percent of program participants with improved practices in food production, preparation, storage, safety and sanitation.

Percent of program participants with increased ability to manage food budgets and related resources such as Food Stamps.

Iς. The data collection methods include a Client Record which has three parts: demographic data on all clients participating; food intake analysis at Entry and Exit on a matched random sample of clients; food behaviors at Entry and Exit on a matched random sample of clients.

ς. The EFNEP program prepares a federal report annually on interagency cooperation. The indicators used for reporting include:

Number and percent of WIC offices and Food Stamp offices within EFNEP communities whose clients are served by EFNEP.

Number of formal agreements and/or coalitions with public or private organizations providing assistance to limited resource audiences.

Amount of money obtained by grants, contributions or other sources to supplement Federal EFNEP allocations.

ςI. This data is secured through the statistical and narrative reports submitted by agents on an annual basis.

ςII. The plan for evaluation is to measure changes in knowledge and behavior by using evaluation tools that are appropriate for use with diverse audiences. Expected outcomes are extension customers who understand the importance of research findings for their daily lives and adopt dietary practices recommended for specific life-cycle stages (*U.S. Dietary Guidelines, the *Food Guide Pyramid and the *Food Label to choose a healthful diet), informed participants in resolving public policy issues concerned with food security and food safety, adopt safe and healthful food selection, preparation, and handling practices, utilize a variety of resources (including appropriate use of food assistance programs) to make safe, nutritious, and economical food choices, and participate in the assessment of food, nutrition, and health needs in their communities. The Cooperative Extension System is uniquely positioned to enhance society's capacity to address these and other critical issues in nutrition, diet, and health through education.

Output Indicators:

Extension:

çIII. Number of Individual Consultations
IΞ. Number of Group Learning Experiences
Ξ. Number participating in Group Learning Experiences
ΞI. Number of Educational Materials Prepared

Research

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

Outcome Indicators:

I. Improved nutritional status of people.
II. Increase in the availability of health promoting foods for consumers.
III. Increase in risk-taking by food companies in developing improved foods.
Iç. Increase in the public's awareness of health promoting dietary and feeding behaviors.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Coordinated health fairs
Diet/Disease programs
Food Safety principles
Healthy Start nutrition program
Nutrition education Seminars
Prepare publicity for Immunization Clinic
TAKING CONTROL worksite series
Wellness mentoring program

Program Need 21: Fiber-Related Products (Textiles and Apparel) and Businesses for Protection, Social, and Economic Enhancement

Statement of Issue:
Rural communities need to have more options for economic development that can improve their quality of life. Fundamental, mission-linked, and multidisciplinary research is required that is socially and culturally sensitive to consumer and economic needs as well as protection of individuals in the underserved rural areas of the Southern states and in particular, Florida.

Programs and Projects :
There are no projects or programs in this area at this time, however Florida A & M University expects to add one in this area within the 5 year reporting period.
Performance Goals:

I. To increase products, services, and information that are focused on issues and problems related to the economic development, protection and social enhancement of rural and urban areas, small towns, rural and urban people, rural/urban organizations, and rural/urban institutions.

Key Program Components:

I. Enhance growth and profitability of textile/apparel manufacturers and retailer via identification of marketing opportunities in the local, regional, national and global marketplace, stimulating technology innovation and implementation stimulation for fiber-related products and services.
II. Enhance trade through consumer and business environment studies.
III. Design for human factors.

Iς. Use of protective clothing for occupational safety and health.

Internal and External Linkages
Target Audiences:

Evaluation Framework:

Output Indicators:
Extension:
ς. Number of Individual Consultations
çI. Number of Group Learning Experiences
çII. Number participating in Group Learning Experiences
çIII. Number of Educational Materials Prepared

Research
I. Increased awareness and adoption of methods to prevent sun and pesticide exposure.
II. Technologies that expand the rural family income and textile and apparel businesses.
III. Recording of successful business strategies.
Iς. Identification of new markets (domestic and international).
ς. Distribution of commercial products, services, and information.

Outcome Indicators:
I. Increased access to, appreciation, and use of technology.
II. Greater consumer satisfaction with rural businesses and their products.
III. Appropriate use of personal and protective gear for health and safety.
Iς. Qualitative improvements in textile and apparel-related business success.
ς. More knowledgeable business and public sectors.
çI. Increased capacity of communities, families, and individuals to improve their own quality of life.
çII. Improved use of human and capital resources.

Allocated Resources:
N/A

Education and Outreach Programs:

Goal 4: Greater Harmony Between Agriculture and the Environment

Program Need 22: Precision Agriculture
Statement of Issue:
Precision agricluture, or site-specific farming, is "a system to better manage farm resources. Precision farming is an information and technology based management system now possible because of several technologies currently available to agriculture. These include global positioning systems, geographic information systems, yield monitoring devices, soil, plant and pest sensors, remote sensing, and variable rate technologies for application of inputs." (NESPAL, Tifton, FA) This information and technology for site-specific farming allows farmers to identify, analyze, and manage the spatial and temporal variability of soil and plants for optimum profitability, sustainability, and protection of the environment Geographic Information Systems (GIS) are a powerful information technology for analysis and management of spatial data and mapping. Remote Sensing (RS) to identify and Global Positioning Systems (GPS) to locate and define spatial features or activities contribute to the quality of site-specific practices. Variability Rate Technology (VRT) allows targeted, site specific input applications. Yield monitoring records crop

productivity as a historical database for crop management. Emerging precision agriculture technologies rely heavily on GIS/GPS/RS/VRT and monitoring.

Precision farming technologies and practices are being introduced rapidly into the market through research. Credible, scientific evaluation is needed to document effectiveness and economic justification of the technologies. Extension programming in Florida is needed to disseminate information about the technologies, and to assist farmers and natural resource managers as they adopt the practices. State Major Projects and research will strengthen coordination of dispersed development of the information management technologies. It will develop educational products to assist extension agents as they work with users of site-specific technologies.

Programs and Projects:

Performance Goal:

I. Improve economic return and global competitiveness of agricultural producers though the sound adoption of precision agriculture.
II. Increase long-term agricultural production while protecting the environment through the adoption of efficient and sustainable management strategies which account for spatial and temporal variation within the production system.

Key Program Components:

I. Development and evaluation of sensor technology for precision agriculture, from remote sensing to real-time machine-based sensors for data acquisition and application control.
II. Agronomic research on a site-specific basis to provide a sound foundation for the development of precision
III. agriculture management strategies and their implementation in precision agriculture.
Iς. Utilization of GIS, crop growth modeling and other analysis techniques for interpretation and prediction of the consequences of spatial and temporal differences in production fields.
ς. Development of analysis tools to assist producers with their decision making and to help identify specific strategies that will enable producers to increase their profitability while protecting the environment. Information and technology transfer to agricultural producers, agricultural chemical and seed industry, and
ςI. agricultural equipment industry.

Internal and External Linkages:

Target Audiences:

Evaluation Framework:

Output Indicators:

Extension:

ςII. Number of Individual Consultations
ςIII. Number of Group Learning Experiences
IΞ. Number participating in Group Learning Experiences
Ξ. Number of Educational Materials Prepared

Research

I. Development and adoption of sensing technologies to effectively measure the temporal and spatial variation in crop production parameters.
II. Provide a strong research base for the development of precision agriculture concepts and their implementation in production agriculture.

III. Development of strategies for the interpretation of spatial and temporal variability on a site specific basis based on sound agronomic principles.
Iς. Development of decision support systems, including the use of Geographic Information Systems, crop production models, climatic data and models, statistical methods and artificial intelligence to determine factors limiting crop production and risk assessment of different strategies.
ς. Information and technology transfer to agricultural producers, agricultural chemical and seed industry, and agricultural equipment industry.

Outcome Indicators:
I. Increased adoption of precision agriculture concepts and technologies by agricultural producers.
II. Commercialization of efficient, cost effective sensing systems to determine the spatial and temporal variability of important production parameters.
III. Adoption of decision support systems and risk assessment models within the agricultural production community; to improve economic return, reduce environmental impact, and manage risks.
Iς. Dissemination of information and strategies through publications and educational programs, to provide producers with the relevant knowledge base to make informed management decisions.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:

Program Need 23: Organic Agriculture
Statement of Issue:
Organic agriculture is based on the principles of sustaining the environment through avoidance of potentially polluting synthetic chemicals. Organic agriculture has been experiencing tremendous gains in acreage and commerce. Based on price differentials in today's marketplace, consumers differentiate more readily on an "organic" label, as opposed to a "sustainable" label. Research on organic production practice in Florida lags far behind what producers require for full participation in the marketplace. A need exists to provide increased organic agriculture research, education, and training in Florida

Programs and Projects:

Performance Goals:
I. Long term economic stability, environmental soundness, and positive social impacts
II. Help ensure appropriate profit in the short, intermediate and long-term for farm families through the development of sustainable/organic crop and pasture systems
III. Provide opportunities on alternative agriculture, diversification and organic agriculture by assisting in the development of a database on alternative production systems.
Iς. Enhance value-added efforts through development of value-retained products (organic), by products
ς. Promote alternative markets by analyzing, facilitating and supporting alternative marketing strategies
ςI. Reduce the reliance of Florida farmers on pesticides and purchased fertilizers through the development of sustainable/organic crop and pasture systems
ςII. Enhance soil quality through the development of sustainable/Organic crop and pasture systems
ςIII. Enhance water quality through the development of rules for the State of Florida. Any water quality certificate programs.
IΞ. Provide research-based information in training to key agricultural professionals, producers, lenders, Natural Resource Conservation services, landowners, Extension and public or private consultants

Key Program Components:

I. Organic agriculture research and education program.
II. Showcase of creative, successful, sustainable agriculture operations.
III. Integrated Crop Management.
Iς. Integrated Planning Approaches, including the Strategic Advantage program.
ς. Holistic Management.
çI. PFI/organic community workshops and field days.
çII. Sustainable agriculture training.
çIII. Manure Management Certification Training.
IΞ. Value Added workshops.
Ξ. Community Supported Agriculture workshops and field days.
ΞI. Leopold Center for Sustainable Agriculture workshops and conferences.
ΞII. Small farm programs.
ΞIII. Sustainable agriculture workgroup.
ΞIς. Extension 21 projects.
Ξς. Alternative livestock systems, including Swine, Pastured Poultry workshops, and MIG programs and pasture walks.

Internal and External Linkages:

Target Audiences:

Evaluation Framework:

Output Indicators:
Extension:
ΞçI. Number of Individual Consultations
ΞçII. Number of Group Learning Experiences
ΞçIII. Number participating in Group Learning Experiences
ΞIΞ. Number of Educational Materials Prepared

Research
I. Research plots established to develop sustainable/organic crop and pasture systems
II. Educational meetings
III. Field days
Iς. Workshops
ς. Publications
çI. Mass media dissemination
çII. One-on-one contacts
çIII. Phone contacts
IΞ. Research and demonstration grants
Ξ. Direct teaching events

Outcome Indicators:
I. Number of producers and acres in certified organic production.
II. Number of producers trained and certified in manure management.
III. Number of community supported agriculture projects (CSAs) active.
Iς. Number of producers and acres involved in Management Intensive Grazing (MIG).
ς. Number of producers adopting practices to improve or protect soil/water quality.
çI. Number of diversified or alternative community marketing systems or strategies.
çII. Number of trained or updated key agricultural professionals in sustainable agriculture.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:

Program Need 24: Sustainable and Environmentally Safe Management of Soil Resources

Statement of Issue:

Four key issues are addressed by this plan of work. The first is management of crop nutrients. All crops require appropriate quantities of nutrients at the right time and in the right place. Poor management of nutrients can result in soil degradation by nutrient depletion or accumulation of unwanted substances in the soil. Excessive applications are a source of inefficiency and cost for the producer as well as a potential source of contamination of water supplies. Two research approaches are required: fundamental research that explores the chemical and biological mechanisms that allow crop plants to take up nutrients, and applied research that focuses on cost-effective and environmentally sound management of nutrients in different soils.

The second issue deals with microbial activities in soil. All crop plants depend on microbially synthesized soil enzymes that play a critical role in creating plant-available forms of nitrogen, phosphorus, and sulfur and in decomposition of crop residues. Soybean plants, in particular, depend on native microbiological partners for nitrogen fixation and enhanced phosphorus uptake. An improved understanding of how soil management practices impact microbial activity and microbial biomass could lead to reduced crop production inputs without sacrificing yields.

The third issue is soil resource assessment and sustainable management. Detailed documentation of soil morphology and spatiality at many scales is fundamental to effective soil use, fair tax assessments, land-use planning, environmental protection and precision application of agricultural inputs to the soil. In addition to assessing the present soil resource, research must be directed to understanding how that resource changes over time. The net effects of soil erosion and other forms of soil degradation threaten both Iowa crop production and surface water quality. Development of improved and economically feasible preventative measures rests upon better understanding of soil formation and degradative process. Research at multiple sites of various ages permits rigorous evaluation of the short- and long-term impacts of soil degradation on food supplies, soil quality, and water quality under various and changing environmental conditions.

The final issue addressed by this plan of work is the fate and transport of chemicals in soils. When pesticides and metals enter the soil they are affected by three major processes: immobilization by complexation and/or sorption at soil mineral surfaces, mobility in soil water, or transformation by biological or abiotic reactions. Knowing the degree to which pesticides and metals are immobile, mobile, or transformed in soil is critical to accurate predictions of both their impacts on water supplies and their bioavailability to plants, soil animals, and soil microorganisms.

Programs and Projects:

Performance Goals:

I. Provide the scientific community, extension specialists, and agricultural producers, and the fertilizer industry with critical information that will improve nutrient management guidelines to increase input effectiveness and decrease environmental risks
II. Provide the scientific community, extension specialists, fertilizer industry, and seed industry with fundamental information about the activity of microbial symbionts in soil or how soil management impacts microbial biomass, enzyme activity, and biological diversity
III. Provide the scientific community, land users, and land-use planners a more complete data base of soil resources to improve predictions of the spatial variability of soil properties and processes and to access the short-term through long-term impacts of soil and crop management on soil quality
Iς. Provide the scientific community, extension specialists, and the agrochemical industry with fundamental knowledge to improve models that predict the fate and transport of metals and pesticides once they are applied to the soil or where they occur in contaminated soils.

Key Program Components:
Basic and applied research conducted in the field, laboratory, or greenhouse and addressing the issues of:

I. Management of crop nutrients in soils.
II. Microbial biomass, microbial activity, and enzyme activity in soils.
III. Soil resource assessment and sustainable soil management.
Iς. Fate and transport of metals and pesticides in soils.

Internal and External Linkages:

Target Audiences:

Evaluation Framework:

Output Indicators:
Extension:
ς. Number of Individual Consultations
çI. Number of Group Learning Experiences
çII. Number participating in Group Learning Experiences
çIII. Number of Educational Materials Prepared

Research
I. Improved nutrient management recommendations for crop producers.
II. Improved understanding of the impact of soil management practices on microbial activity, microbial biomass, enzyme activity, and biological diversity in soils.
III. Improved soil management recommendations.
Iς. Improved database and understanding of soil resources.
ς. Improved predictions of the fate and movement of metals and pesticides in contaminated and agriculturally managed soils.

Outcome Indicators:
I. Increased crop production per unit of inputs (e.g., land, fertilizers) with decreased environmental risks.
II. Minimized soil degradation and off-site impacts of crop production.
III. Better informed land users and land-use policy makers.

Allocated Resources:

Education and Outreach Programs:

Program Need 25: Integrated Pest Management/Biological Pest Management
Statement of Issue:
Integrated Pest Management (IPM) promotes minimized pesticide use, enhanced environmental stewardship, and sustainable systems. This is achieved by protection of commodities, homes, and communities with environmentally and economically sound practices that result in abundant, high quality supplies of food and fiber products and improved quality of life.

Several forces in the United States today are intensifying the need for increasing the practice of IPM. The Food Quality Protection Act (FQPA) recently passed by Congress mandates removal of many traditional pesticides from the marketplace by the year 2001. The Clinton administration has mandated a long-range goal of having 75% of farm acreage under IPM practice. These mandates, as well as the increasing public concern with and intolerance toward traditional toxic pesticides in food and in the environment, mean that new alternative methods of pest control will need to be developed.

Programs and Projects :
Smith-Lever - FL122
Smith-Lever - FL123
Smith-Lever - FL419
Hatch - 3423

Performance Goals:

I. Conduct research and education programs in integrated pest management that will improve Florida Agriculture and the quality of life for Florida citizens in and around the home, workplace, neighborhood, and recreation areas.

Key Program Components:

I. Development of detection, monitoring, and sampling systems that reliably and sensitively indicate the presence and abundance of pest species.
II. Development of economic thresholds and models that provide guidance for taking action against pest populations.
III. Development of novel, alternative technologies and strategies for mitigating pest populations.
Iς. Development of systems for improved monitoring, risk assessment and remediation of residues from traditional pesticides and their metabolites.
ς. Development of methods to reduce the resistance of pests to novel IPM technologies and strategies in order to optimize their sustainability.
ςI. Develop and deliver customized IPM continuing education courses targeting professional and consumer audiences.
ςII. Develop interactive information centers for increasing responsiveness to inquiries and improving accessibility of producers and the public to up-to-date IPM research information.
ςIII. Improve awareness of students to international aspects of IPM by developing study abroad course offerings.
IΞ. Develop and deliver new resident instruction courses in IPM principles and practice.
Ξ. Develop and implement improved methods of delivering IPM educational programs, including utilization of electronic and web-based formats.
ΞI. Develop improved K-12 education in IPM by more intensive outreach programs and courses that 'teach the teachers'.
ΞII. Develop improved pest diagnostic capabilities, including utilizing electronic communication where possible.
ΞIII. Develop the capability to remotely deliver laboratory components to IPM-related courses.
ΞIς. Encourage faculty involvement in technology transfer activities.

Internal and External Linkages:
67 Florida County Cooperative Extension Offices
Agricultural and Biological Engineering
Agronomy
American Association of Pesticide Safety Educators
CSREES
Department of Agriculture and Consumer Services (DACS)
Department of Environmental Protection
Entomology and Nematology
Environmental NGO's
FDACS Bureau of Entomology and Pest Control
FDACS Bureau of Pesticides
Florida Department of Agriculture and Consumer Services (FDACS), Bureau of Compliance Monitoring
Florida Farm Bureau
Florida Fertilizer and Agrichemical Association
Florida Fruit and Vegetable Association

Food and Resource Economics
Local school districts
Local, State, and Federal Health Agencies
Mosquito Control Districts
Plant Pathology
Sebastian River High School
Subcommittee on Managed Marshes
USEPA Certification and Worker Protection Office
Water Management Districts

Target Audiences:

I. Private applicators (growers or producers of agricultural commodities)
II. Commercial and public applicators (persons in the business of applying pesticides to the property of other persons, government employees, and owners or employees of private businesses)
III. Growers, commodity groups, Cooperative Extension specialists and agents, experiment station researchers, government agencies, and agricultural industry.
Iς. Florida residents and visitors, public and private mosquito control programs and businesses, county faculty, local, state and national agencies and special interest groups that focus on pest control or environmental issues in Florida.

Evaluation Framework:

I. Numbers of applicators and other persons receiving pesticide training will be collected and tabulated.
II. Licensed applicators will be surveyed to collect information on improvement or changes in pesticide use practices.
III. We will use feedback from recipients of the information to evaluate its impact. This will include responses to the monthly newsletter.
Iς. Evaluation can include the number and type of responses to requests for benefit use information on pesticides used in Florida.
ς. Evaluation may also include the number and kind of pesticide use surveys conducted.

Output Indicators:

Extension:

ςI. Number of Individual Consultations
ςII. Number of Group Learning Experiences
ςIII. Number participating in Group Learning Experiences
IΞ. Number of Educational Materials Prepared

Research

I. Dissemination of research results concerning integrated pest management that will optimize the ability of agriculture to be productive, economically profitable, and competitive while positioning it to meet future challenges of shifting consumer expectations.
II. Dissemination of integrated pest management research results that directly and sustainably impact in a positive way the health, safety, and well-being of citizens in and around their homes and communities.

Outcome Indicators:

I. Increased use of IPM with concomitant decreased use of traditional pesticides.
II. Increased use of alternative pest management technologies and strategies.
III. Reduction of residues of traditional pesticides in groundwater.
Iς. Reduction in the daily exposure of humans and animals to traditional pesticides.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:

Best Management Practices in Woody Ornamentals
Bi-monthly newsletter for mosquito control
Effective Irrigation Management
Irrigation Workshops
Nursery Seminar
Subsurface Drip Irrigation and Water Table Control
Training courses for Oslo Riverfront Conservation Area nature guides

Program Need 26: Animal Waste Management
Statement of Issue:
“Any Florida dairy farmer that is not giving consideration and investment to their dairy's waste management system is jeopardizing their own operation's future and that of the industry." That statement was made by Art Darling of Florida Dairy Farmers, Inc.
Concerns regarding nutrient losses from animal manures to surface and groundwaters have been extremely acute. Animal production is a major agricultural enterprise for Florida and the nation. Public concern over the management of animal manure has become a major environmental issue in and in many other states with significant animal production especially in areas of the state that have been predominately agricultural and are now suffering from urban sprawl. Major environmental issues center on water quality (surface and groundwater) and gaseous emissions including odors. However, there are many other associated environmental issues such as animal disease control, insect populations, dust, extra traffic, and proper disposal of dead animals. Florida has experienced significant changes in the number and structure of animal production systems in the past decade. There are fewer, larger animal production operations particularly in swine, layer and dairy operations. There is a need to support animal production as a value-added process for agriculture while maintaining and improving our environment through the use of improved management techniques to take advantage of the abundant land resources available throughout the state.

Animals have not been efficient users of nutrients supplied in their diets. Therefore, significant plant nutrients are found in animal manures. These nutrients, particularly nitrogen, phosphorus, and potassium, are needed for crop inputs. New technologies in genetics and nutrition will allow less nutrients to be produced per unit of animal production. Animal manures are not currently being utilized as efficiently as possible in Florida.. These excessive rates of application can lead to both surface and groundwater pollution.

Odors have always been a problem surrounding the management of manure from animal productions systems. However, with the increased concentration of animals and the adoption of liquid manure handling systems, odor problems have become more severe. Community problems have been observed with the consolidation of the animal industry. There are fewer small, independent animal producers in the state today. Large-scale operations have not been welcome in most communities. Therefore, there is less tolerance for odors and more potential for surrounding neighbors to be impacted by odors from larger operations. These social problems have created an ever-increasing hostility between animal producers and surrounding neighbors. Odor complaints have increased as a result of these community problems.

Other long term environmental impacts such as ammonia release and greenhouse gas production from animal production systems have been noted in other parts of the world and will need to be addressed to maintain a long-term sustainable agriculture in Florida. Much information exists which can be applied to help recycle the much needed fertility nutrients in animal manures, but management of the systems involve all of the disciplines of animal nutrition and management, crop production, soil fertility, and engineering. When the secondary problems of flies and odor management are considered, even more extension discipline specialists are needed to help animal food producers utilize practices that will permit existence of those producers in proximity to non-farm neighbors.
Programs and Projects:
Smith-Lever - FL106

Performance Goals:

I. Maintain and increase the value of animal agriculture in Florida while improving the soil, water, and air quality as a result of animal production
II. Maintain the competitiveness of animal production in Florida
III. Develop animal production systems that are not environmental threats to communities and that improve the economy of the area.

Key Program Components:

I. Integrate plant and animal genetics, nutrition, housing, waste management and cropping system research and education to minimize both internal and external costs associated with animal production.

Internal and External Linkages:

American Dairy Science Association
American Society of Agricultural Engineers
American Society of Animal Science
Crop and Soil Science Society
Florida Beef Producers
Florida Dairy Farmers
Florida Department of Agriculture and Consumer Services
Florida Department of Environmental Protection
Florida Farm Bureau
Florida Poultry Producers
Poultry Science Association
South Florida Water Management District
Suwannee River Water Management District
USDA/NRCS

Target Audiences:

I. Dairymen, poultry producers, cattlemen, advisors, and regulatory personnel

Evaluation Framework:

Output Indicators:

Extension:

II. Number of Individual Consultations
III. Number of Group Learning Experiences
Iς. Number participating in Group Learning Experiences
ς. Number of Educational Materials Prepared

Research

I. Better designed animal production systems.
II. More efficient nutrition formulations.
III. Improved animal manure handling, storage and application management systems.

Outcome Indicators:

I. Animal production that is in balance with the natural resources in the state.
II. Efficient utilization of animal manures and byproducts by a majority of animal producers.
III. Reduction in crop nutrients imported into the state.
Iς. Decrease in nutrients recycled in animal manures.
ς. Improved surface and groundwater.
ςI. Improved animal manure management and the proper utilization of cropland.
ςII. Animal production systems designed and managed to be "good neighbors."
ςIII. Environmental impacts reduced to minimum.

IΞ. Animal facilities accepted as well as any other agricultural activity.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Demonstrations
Field day
Field research study and demonstration project
Gadsden County Aquaculture Training Assistants
Maintenance Programs
Newsletters
Pinellas County Pesticide Training Program
Polk County "Adopt-A-Pond" Program
Workshops

Program Need 27: Water Resources
Statement of Issue:
The growing urban population and its distribution in the state of Florida have strained water resources. Although rainfall varies between 48 and 68 inches and water use ranges from 1 to 4 inches per week (average per water management district). Withdrawals are not distributed uniformly, water withdrawals occur at times in which water supply is low, and areas where water demand is largest is extensively drained or paved, which hinders recharge. The most severe problem related to water occurs on the central to southern part of the peninsula and tends to be aggravated toward the coast. In addition, competing users of water as well as environmental necessities give water a dimension that goes beyond the issues of quality and quantity. The major uses of water are irrigation (41%), thermoelectric (24%), public supply (17%), industrial (14%), and rural (4%). The emphasis of this plan will be the reduction of water use quantities and will be directed to urban and agricultural audiences. Groundwater and surface water quality are of paramount importance to Florida citizens. About 2 million of the estimated 14.2 million Florida residents (FSA, 1995) have self-supplied domestic drinking water withdrawing about 297 MGD (million gallons per day). Water from these wells are used untreated by many residents. 1.75 million septic tanks discharge about 236 MGD into the soil beneath leach lines. In the period 1993-1995 an average of 38832 septic tanks were installed per year. Widespread and frequent use of agrichemicals, plus the frequency of nitrogen and phosphorus leaching from extremely sandy soils during intense subtropical rains, have led to sizable risks to ground- and surface-water quality and to growing consumer concerns over water quality deterioration. While public fears often prove to be considerably overstated upon critical examination, groundwater pollution concerns must be continuously addressed, and at the same time the populace must be continuously educated. Florida also has more than 7,700 natural lakes, which range in size from 0.4 ha to over 180,000 ha. Nearly 7% of the state's land area consists of water, constituting an important freshwater fishery and serving as important water-recreation areas. According to the state's trophic-index system, 52% of the lakes in a recent survey were classified as mesotrophic, and 35% as eutrophic. Florida also has 4.4 Mha of wetlands that provide a buffer between anthropogenic activities and water quality of lakes, streams, and groundwater. Recognition of the function of wetlands is necessary for sustainable development in Florida.

Programs and Projects:
Smith-Lever - FL411
Smith-Lever - FL412
RRF - 3492

Performance Goals:
I. Improve Florida’s surface water quality for human and wildlife uses
II. Contribute to the restoration and sounder management of _____ (tropic???)zone vegetation, fish and other aquatic wildlife populations in Florida, regionally and nationally
III. Increasing economic and cultural benefits derived from societal uses of the water resources

Key Program Components:

I. Monitor and assess sources of sediment and agricultural and other chemical inputs into surface waters.
II. Evaluate impacts of agricultural land and water use practices on aquatic environmental quality, including the well-being of aquatic organisms.
III. Develop information needed to restore appropriate plant communities to riparian zones and hydrologic source areas.
Iς. Determine habitat requirements and population and trophic dynamics of economically important fishes.
ς. Conduct surveys and evaluate the status of rare and endangered aquatic species.
ςI. Evaluate habitat features affecting bird communities which utilize restored wetland complexes.
ςII. Provide publications, WWW sites, and workshops to increase knowledge on water and wetland resources by the general public.
ςIII. Provide environmental assessment data required for improved state and federal water resources management programs.
IΞ. Train private consultants and agency personnel on the development and management of riparian buffer zones.
Ξ. Train private and agency aquatic pesticide applicators on chemical safety.
ΞI. Conduct on-site evaluations and make recommendations for management of private ponds and lakes relative to water quality, aquatic vegetation control, and sport fisheries.

Internal and External Linkages:
Internal: County Extension Offices: All 67 county Cooperative Extension Offices; Master Gardeners; Master Wildlife Conservationists

UF/IFAS Departments: Fisheries & Aquatic Sciences; Environmental Horticulture Department; Wildlife Ecology & Conservation; Educational Media and Services, Family, Youth and Community Sciences; Agricultural and Biological Engineering; Information Technologies; Center for Natural Resources; Entomology and Nematology; Plant pathology;
UF/IFAS Research and Education Centers: Citrus CREC-Lake Alfred; Indian River REC-Ft. Pierce; Central Florida REC-Apopka; Everglades REC- Belle Glade; Ft. Lauderdale REC; Gulf Coast REC-Bradenton; North Florida REC-Quincy; Southwest Florida REC-Immokalee; Suwannee Valley REC-Live Oak; Tropical Research and Education Center-Homestead; West Florida REC- jay.

External:
Governmental:
(Federal) USGS (Water Resources Division, Tallahassee District); US Fish and Wildlife Service (St. Marks NWR); USDA-Forest Service (Apalachicola NF); USDA-NRCS State and District offices. USDA Farm Services Agency; Farm Credit Service; USEPA, Pffice of Pesticides;
(State) Florida Department of Environmental Protection (Office of Ecosystem Management, Stormwater/Nonpoint Source Management Section, Bureau of Invasive Plant Management); Florid Game and Fresh Water Fish Commission; Florida Department of Health; Florida Department of Agriculture, Division of Forestry, Bureau of Water Quality, Bureau, of Pesticides;

(Regional Water Management Districts) Northwest Florida Water Management District; St. Johns River Water Management District; Suwannee River Water Management District; South Florida Water Management District; Southwest Florida Water Management District;

(County/City)
Leon County Stormwater Engineering; Leon County Growth & Environmental Management; City of Tallahassee Stormwater Management Dept.; City of Tallahassee Water Quality Lab Division; City of Tallahassee / Leon County Planning Dept.; Leon County Schools; Pinellas County School Board; Wakulla County Schools; Woodville Karst Plain Project; Florida LAKEWATCH program; Pinellas County Literacy Council; Pinellas County School Board; Escambia County Parks Department; Escambia County

Master Gardener Association; Escambia County Public Works; Appalachee Regional Planning Commission; Gulf County School Board; Gulf County Department of Health;

Non-governmental: Florida Literacy Coalition; Pinellas County Literacy Council; Adult and Community Educators Inc.; Family and Community Educators Association; Florida Envirothon, INC.; Florida Ground Water Association; Florida Farm Bureau; Florida Septic Tank Association; Florida Cattlemen's Association; Champion International, Timberlands Division; Gulf Power; Langley Bell 4-H Camp Trustees; Florida Nursery Grower s Association; Florida Dairy Farmers Inc.; Sunshine State Milk Producers,Inc;

I. American Federation of Engineering Societies (AAES)
II. American Society for Civil Engineers
III. American Society of Agricultural Engineers (ASAE)
Iς. Florida Department of Agriculture and Consumer Services
ς. Florida Farm Bureau
ςI. Florida Irrigation Society
ςII. Florida State Horticultural Society
ςIII. Food and Agriculture Commission of the World Federation of Engineering Organizations
IΞ. Hillsborough Water Supply Authority
Ξ. Irrigation Association
ΞI. Natural Resources Conservation Service (NRCS)
ΞII. Soil and Crop Science Society of Florida
ΞIII. USDA Natural Resources Conservation Service
ΞIς. Water management districts

Target Audiences:
I. General public, community groups, community leaders, service industry, farmers and growers, livestock and poultry producers, professional managers of agricultural systems, support industries, local government, state and federal agencies.

Evaluation Framework:
I. A physical inventory of water resources will be developed to track in detail water use by categories and to identify targets for Extension education. This evaluation is to be done yearly.
I. A statewide program for evaluation of irrigation systems will be developed, including:
a) Testing procedures
b) Training of technicians
c) Development of standards
I. The success of the program will be measured in terms of adoption by local governments and state agencies.
I. In-service training of county staff. Success will be measured in terms of attendance and activities reported by the county staff (using the yearly reports of work).

Output Indicators:
<u>Extension:</u>
II. Number of Individual Consultations
III. Number of Group Learning Experiences
Iς. Number participating in Group Learning Experiences
ς. Number of Educational Materials Prepared

<u>Research</u>
I. Greater understanding of the impacts of agriculture land and water use practices on aquatic environmental quality.
II. Knowledge required to restore plant communities to repasian zones and hydrologic source areas.

III. Greater understanding of the habitat requirements and population to trophic dynamics of economically important fishes.
Iς. Environmental assessment data for improved state and federal water resource management programs.

Outcome Indicators:
I. Adoption of project recommendations for achieving surface water quality improvement.
II. Revision of state fisheries and aquatic endangered species management policies based on project inputs.
III. Increased populations of native aquatic biota.
Iς. Increased wetland restoration and improved riparian management on public and private lands.
ς. Greater societal recreational and economic benefits from surface water uses.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Eco Gardening Conference
Field trip to view the EPA water quality and quantity demonstration project
Inservice Trainings
ISA Utility Pruning Talk
Landscape Water Budget Project
Maintenance Workshops
Meeting of the North Florida Growers Exchange (NFGE)
Newsletters and mail-outs
Pesticide Certification Training
Seminars
Short Courses
Water Conservation News Articles
Workshops

Program Need 28: Interactions Among Agriculture Biosystems, Weather and Climate

Statement of Issue:
There is a particular need to address climatological trend interpretation and climate change at regional scales, especially warm season rainfall, which is of great importance to agricultural interests. Such understanding of the dynamics of climate systems allows evaluation of agricultural vulnerability to changes in land use or in greenhouse gases. Because of the interconnection of the global climate system and the global agricultural economy, it is also important to understand other regions' climate variability, which may affect global climate and, hence, domestic crop production and which may affect agricultural competitors in the world market.

Programs and Projects :
Smith-Lever - FL316

Smith-Lever - FL416

CSRS - 3721

Performance Goals:
The ultimate goal of this project will be to enable improved production practices and better marketing of agricultural products through improved understanding of weather and its interactions with agriculture.
I. Develop predictive relationships for crop yield in the southern region as a function of climate forcing mechanisms
II. Improve weather forecasting in the southern United States
III. Take research to the classroom and off campus

Iς. Define sustainable agricultural risks as related to climate
ς. Develop instruments, technology and observational analysis models useful to agricultural production and protection

Key Program Components:
I. Assemble and update both weather and crop yield data in the north central region and ascertain relationships between crop response and weather.
II. Evaluate the characteristics and processes of regional weather and climate that may be vulnerable to climate change or climate variability.
III. Develop optimum strategies for merging microclimate models with soil and vegetation models.
Iς. Use regional climate models to simulate present and future climates to establish data sets for use in evaluating impacts of climate change on yield.
ς. Quantify relationships between El Niño/Southern Oscillation (ENSO) activity in the Pacific and weather effects on crop production in the South.
ςI. Develop climatology of mesoscale rainfall systems and related atmospheric processes during the strong El Niño-La Niña event of 1997-98.
ςII. Investigate the roles of the thermodynamic and dynamic effect of changes in soil moisture on warm season precipitation events.
ςIII. Evaluate possible forecast improvements from the use of enhanced data.
IΞ. Develop techniques to improve forecasting of mesoscale convective systems.
Ξ. Evaluate components of climate risk analysis as it pertains to sustainable agricultural systems, emphasizing soils, grain quality, pest management and crop yield.
ΞI. Understand climate in other key regions that potentially affects markets for agricultural products.
ΞII. Develop methods for sensing and recording environmental conditions impacting crop production and protection.
ΞIII. Develop analytical models to enable satellite observations to be used in forecasting crop disease, insect pest activity, and crop conditions.
ΞIς. Take research results into the classroom through development of curricula and materials using multimedia software to develop scientific understanding.

Internal and External Linkages:
See section III. Tables

Target Audiences:
I. University faculty as specialists to research and design education programs for homeowners along waterways, coastal businesses which are most likely to pollute estuaries, citizens and local officials. Also other Extension faculty, who need to understand implications of their clienteles action which impact coastal water quality.
II. Aquatic plant managers, land managers, aquaculturists, general public, policy makers.

Evaluation Framework:
I. Assess change in practices by homeowners and businesses who are likely to be sources of pollution.
II. Increase in youth presentations as public speaking or 4-H projects that are concerned with coastal waters and fish habitats.
III. Increase in data gathered by citizens and made available to researchers.

Output Indicators:
<u>Extension:</u>
Iς. Number of Individual Consultations
ς. Number of Group Learning Experiences
ςI. Number participating in Group Learning Experiences
ςII. Number of Educational Materials Prepared

Research

I. New or improved techniques to improve forecasting.
II. Greater understanding of climates in other regions that affect Southern climate.
III. New methods for sensing and recording environmental conditions.
Iς. New analytical models for using satellite observation to forecast crop disease, insect pest activity, and crop conditions.
ς. New understanding of crop-weather-climate relationships for agricultural and related use.

Outcome Indicators:

I. Greater public understanding of climate forcing functions and impacts.
II. Program graduates better equipped to address the agricultural sector's crop-weather-climate issues.
III. Improved weather and climate forecasts.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Aquatic, Wetland and Invasive plant informational retrieval system
Private pond owners and homeowners association meetings
Public education related to invasive plants
Statewide aquatic plant control and re-vegetation workshop
Training of aquatic herbicide applicators and natural areas managers

Program Need 29: Environmental Quality in a Changing Landscape
Statement of Issue:
"At every ecological level we examine - genetic, species, community, ecosystem and landscape - Florida appears to be on the brink of biological impoverishment." (The Florida Biological Diversity Task Force, 1993). Currently 118 wildlife species are legally listed as endangered, threatened, or species of special concern. Florida is second in the contiguous 48 states in the number of federally listed plants and animals. Another 49 species that have not been reviewed by the formal listing process have been found to be in just as much jeopardy of extinction as the legally listed species. Half of all Florida's non-marine vertebrates are declining in number. The greatest cause of recent extinctions and declining populations, and the major threat to the continued existence of current wildlife diversity in Florida, is human-caused land conversions. Millions of acres of native habitats and half of the state's original wetlands have been converted into resort areas, residential subdivisions, roads, shopping centers, and other urban development-related land uses. Over 150,000 acres of agricultural lands in Florida are transformed annually into urban lands. Wildlife needs are addressed mostly on a site by site basis with little effort to maintain the ecological integrity of natural systems. Arbitrary political decisions based on a general public concern for the environment are made without consideration of the ecological functions of natural systems. This unscientific, reactive approach benefits common, adaptable, generalist, pest species, and is detrimental to sensitive, specialist species.

Species-by-species conservation has not proved successful in helping listed species to recover to and unlisted status. It ignores the needs of many species that are in just as much jeopardy of extinction as listed species, and provides no mechanism to protect lands currently unused by listed species so these populations have room to expand and to recover.

Ecosystem conservation involves preserving, enhancing, and restoring the biological diversity and ecological integrity of natural systems. This proactive approach does not have to be restricted to large-scale projects on state and national parks. An ecosystem focus applied at all scales from large public open spaces to individual properties in residential subdivisions will emphasize a consistent educational message; i.e. the best way to conserve our natural biological diversity is to maintain and to restore natural functions of

ecosystems. Although maintaining full natural ecosystem function is not possible in most urban landscapes, more realistic and measurable objectives such as maintaining 80% of the native plant and animal diversity or increasing the diversity by 5 species a year on a specific site can be easily accomplished.

Programs and Projects:

Smith-Lever - FL113

Smith-Lever - FL114
Smith-Lever - FL415
Smith-Lever - FL417
Smith-Lever - FL418

Smith-Lever - FL269

Performance Goals:

I. Geographically inventory, describe, and monitor Florida natural resources
II. Contribute information for use by land managers, planners, scientists, and policy makers to make better-informed decisions on natural resources conservation.
III. Determine appropriate spatial scales to evaluate wildlife habitat relationships and develop and apply models to explain such relationships
Iς. Apply ecological theory and techniques to improve wildlife habitats and populations
ς. Contribute a landscape perspective to evaluate government agricultural and natural resources policies and programs
ςI. Provide landscape approaches for Florida communities to deal with state and regional environmental issues

Key Program Components:

I. Accumulate natural resources and biological diversity databases.
II. Determine relationships between environmental quality and landuses.
III. Develop ecological indicators of environmental quality by empirical measures and modeling.
Iς. Evaluate impacts of government agricultural policy on renewable natural resources.
ς. Identify key features of anthropogenic landscapes which influence local cultural decision-making.
ςI. Determine needs for native faunal re-establishment in restored ecosystems and project long-term responses of populations to land uses.
ςII. Design watershed land uses and practices which provide sustainable agricultural productivity and ecological integrity.
ςIII. Evaluate social strategies for achieving agri-ecological improvements.
IΞ. Evaluate potential for contributing to a functional regional ecosystem.
Ξ. Provide publications, WWW sites, and programs to increase public knowledge on land use and environmental relationships.
ΞI. Conduct technical workshops for land use and environmental policy makers, planners, and managers.
ΞII. Assist federal and state agencies and communities to prepare watershed environmental management plans.
ΞIII. Assist farm operators to prepare farm environmental management plans.
ΞIς. Provide coordination and integration services for state and federal renewable natural resources managers.

Internal and External Linkages:

Alabama Department of Economic and Community Affairs
Audubon Society
Department of Community Affairs (of Florida)

-Everglades Restoration
Florida Department of Corrections
Florida Department of Transportation
Florida Department of Agriculture and Consumer Services
Florida Department of Environmental Protection
Florida Department of Health and Rehabilitative Services
Florida Fish and Wildlife Conservation Commission (formerly Florida Game and Fresh Water Fish Commission)
Florida Game and Freshwater Fish Commission
Florida Golf Course Superintendents Association
Florida House Foundation
Florida Landscape Maintenance Association
Florida Nurserymen and Growers' Association
Florida Parks Service
Florida Pest Control Association
Florida Sustainable Community Network (Florida A&M University)
Full Circle Solution
Governor's Council for a Sustainable Florida
Indian River Lagoon National Estuary Program
National Resource Conservation Service
Northwest Florida Water Management District
Sarasota Bay National Estuary Program
-SchoolYard Ecosystem Program
Soil Conservation Service
Southwest Florida Water Management District
St. Johns River Water Management District
Tampa Bay National Estuary Program
U.S. Environmental Protection Agency
US Fish and Wildlife Service
USDA, Sustainable Community Extension Network (some)
West Coast Regional Water Supply Authority

Target Audiences:

I. Individual property owners and renters and consumers
II. Planners, policy makers, regulators and other decision-makers and community leaders who establish the framework within which communities are developed and managed
III. Building and landscape designers and contractors
Iς. Professional realtors, property managers and building inspectors
ς. The building service industry
ςI. Vocational teachers and institutions who train individuals to work in the building trades, landscape management, property management, and related fields.
ςII. General Audience: consumers, youth, retail nursery personnel, landscape maintenance personnel, landscape contractors, irrigation contractors, parks and recreation personnel, pest control operators, property managers, pesticide applicators, architects, landscape architects, building contractors, utility conservation personnel, and water and other environmental regulatory personnel.
ςIII. Landowners, urban citizens, forest landowners, public officials, natural resource professionals.
IΞ. Private property owners, builders, landscape architects, and K-12 school teachers.
Ξ. Homeowners, nuisance wildlife trappers, pest control operators and technicians, animal control departments, greens keepers and lawn care professionals, farmers and ranchers.
ΞI. Small-scale farmers, rural families, public officials, agency representatives, local organizations and community leaders, wholesalers and retailers.

Evaluation Framework:

I. Educational programs developed under FL 113, such as the series for builders "Build Green and Profit" and the series for realtors "Sell Green and Profit," will be evaluated three ways. (1) A pre and post-test of knowledge gained will determine how effective our programs are in teaching environmentally sound concepts. (2) A process evaluation will be used to determine how well our educational materials and programs meet participant needs and objectives. (3) A follow-up evaluation of a randomly selected sample of program participants will determine the number of participants who incorporate the recommended practices into their work. We expect at least 500 contractors to participate in "Build Green and Profit" and 250 realtors to participate in "Sell Green and Profit" prior to August 31, 1999. We hope to bring a new program, "Renovate Green and Profit" on line in 1997/98. We will conduct the pre- and post-tests and process evaluations of this program during this planning period, but will not have time to conduct the follow-up evaluation of change in practice. Similar evaluation techniques are used for our programs for condominium managers and building inspectors.

II. We have applied for a grant (extramural) to develop materials for elected decision makers, such as county commissioners and planners. If these funds become available, we will be developing an educational program for this group during the current planning period. It will be evaluated as described above.

III. We will evaluate our "Sustainable Community Development" web site by the number of individuals who access the site.

Iς. Link to Sustainable Community Development Web Page

ς. We have developed an in-depth, state-wide evaluation program to determine landscape practices used. Prior to an ELM-related presentation, a pre-test is given to ascertain customers' knowledge of environmentally sound landscape management practices. Three to six months after the presentation, a sample of those customers is contacted and asked to complete a post-test designed to determine which ELM practices have been adopted. These responses will be tabulated by the Office of Program Evaluation and Organizational Development to obtain results statewide and by county.

ςI. The ways to measure the above five impacts and outcomes will be through:
Evaluations of our workshops, courses and symposia,
Evaluations of the Forest Stewardship Program,
Collection of information about Best Management Practices,
County information on alternative enterprises,

I. Information on management practices and acreage from the Urban Forestry Institute.

II. Increased knowledge of customers: This will be quantitatively assessed through the use of pre and post tests conducted at the beginning and end of workshops (builders, landscape architects, and school teachers) and also handled via mail surveys (private property owners).

III. Increased participation in ecosystem conservation activities:

Builders and landscape architects: Annual follow-up contacts will be used to determine increases in participation in conservation activities and to compare with data collected at the beginning of workshops where they receive continuing education credits.

Private property owners: Annual follow-up contacts with participants in the Florida Wildlife Habitat Program will be used to determine increases in participation in conservation activities and to compare with data collected when they enrolled in this correspondence program.

School teachers: Annual follow-up contacts (through FIRN) with teachers participating in the Schoolyard, Ecosystem Program will be used to determine increases in participation in conservation activities and to compare with data collected when they enrolled in this program. Carry out survey to determine the number of individuals to request and use the technique or information provided. Determine if there is a reduction in the amount of polluted wells or other water resources in areas where the information has been disseminated. Determine if there is a decrease in the contaminant level of previously polluted water sources.

Output Indicators:

Extension:

Iς. Number of Individual Consultations

ς. Number of Group Learning Experiences

ςI. Number participating in Group Learning Experiences

ςII. Number of Educational Materials Prepared

Research
I. Improved recommendations for watershed land uses and practices.
II. More complete databases of natural resources and biological diversity.
III. Better understanding of the relationships between environmental quality and land uses.
Iς. New ecological indicators of environmental quality.
ς. Greater understanding of impact of agricultural policy on renewable natural resources.

Outcome Indicators:
I. Increased interagency sharing and use of databases for agricultural and renewable natural resources policy making and programming.
II. Greater use of spatially based models for natural resources management.
III. Increased public awareness of land use impacts on environmental quality.
Iς. Improved agricultural land use practices for purposes of environmental protection and pest management.
ς. Reduced societal conflict over competing land uses and increased community involvement in watershed management.
ςI. Economically improved rural and urban communities through more rational and efficient uses of the state's natural resource base.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Creating and Protecting Wildlife Ecosystems
Landscape Maintenance Workshops
Master Wildlife Conservationist Continuing Education Programs
Pesticide Certification Training
Seminars
Short Courses
Volunteer Training for Home*A*Syst Consultations
Water Conservation News Articles
Landowner Visits
Publications
Resource Materials
Workshops

Program Need 30: Enhancement of Environmental Quality in Animal Production
Statement of Issue:
Florida's increasing population (now 14 million) continues to put a high demand on the state's water and land 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 was groundwater (Florida Statistical Abstracts 1992).

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 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 1,000 lbs/acre of inorganic fertilizer to their corn. In

proper amounts of fertilizer are also often used in the production of forage and other products grown for animal nutrients.

The high seasonal rainfall occurring in Florida (average 55 inches annually), will readily facilitate leaching and/or runoff of these chemicals in the state's fragile soil-zone environment. It is important that these fertilizers and other chemicals, ingredients of paramount importance to the state's agricultural industry, be used and applied in such a manner that they do not become polluting agents of the state's vulnerable water resources.

Programs and Projects:
Smith-Lever - FL413
Performance Goals:

Key Program Components:

Internal and External Linkages:

Target Audiences:

I. Commercial (523 active producers) and recreational (many 1,000s) aquaculturists, potential aquaculturists and pond owners, existing pond owners (>100,000), farmers and landowners, financial lenders, along with countless waterfront property owners and youths. Veterinarians will be targeted for specialized continuing education programs in aquaculture and aquatic medicine.

Evaluation Framework:

I. Pre/post surveys to document implementation of various management options.
II. Determine economic benefits resulting from aquacultural development (Florida DACS Survey of Aquaculture performed every two years).
III. Coordinate county programs with statewide development of aquaculture and pond management programs to provide overall accountability.

Output Indicators:

Extension:

Iς. Number of Individual Consultations
ς. Number of Group Learning Experiences
ςI. Number participating in Group Learning Experiences
ςII. Number of Educational Materials Prepared

Research

Outcome Indicators:

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
Community Leadership Development Training
Eco Home Study Course
Educational Material and Program Support
Educational Programs
FastTrac Program
Homebuyer Education Classes
Housing Newsletter
Inservice Training
Leadership Exhibit

Quarterly Newsletter
Seminars
Strategic Planning/Enterprise Community
Teleconference

Program Need 31: Nutrient Management
Statement of Issue:
Currently, agricultural irrigation consumes over 40 % of the fresh water used in Florida and one half of the nurseries are located within one mile of urban centers. Florida's limited water resources and increasing urbanization may lead to competition between the public and agriculture for potable water. Florida's environmental horticulture industries are traditionally heavy users of water: 50 to 100 inches of water per acre per year may be applied as irrigation. Presently,15-60% of irrigation water applied overhead and less than 50% applied fertilizer by the plants. Preferably, environmental horticultural horticultural industries should strive to use water as efficiently as possible to prepare for any future water shortages that may result from drought, reduced water quality, or reduced allocations. Additionally, nutritional management strategies such as monitoring the crop nutritional status and monitoring nitrate content of ground water or surface water leaving the nursery property should be practiced on a regular basis.

Programs and Projects:

Performance Goals:

Key Program Components:

Internal and External Linkages:

Target Audiences:

Evaluation Framework:

Output Indicators:
Extension:
çIII. Number of Individual Consultations
IΞ. Number of Group Learning Experiences
Ξ. Number participating in Group Learning Experiences
ΞI. Number of Educational Materials Prepared

Research

Outcome Indicators:

Allocated Resources:
See section III. Tables

Education and Outreach Programs:

Goal 5: Enhanced Economic Opportunity and Quality of Life for Americans

Program Need 32: Community Economic Development
Statement of Issue:
The vitality of a community stems from an interrelationship of many factors that can enhance or impede development. Some of these factors that impede development are the same ones that describe the uniqueness of the community, how it developed and what the future prospects might be. In each case, there

is both a positive and a negative aspect to each factor. The challenge is to utilize the uniqueness to enhance the community vitality while, at the same time, maintaining those factors that enhance development. In the case of rural communities, these factors include: (1) remoteness from metropolitan areas which limits access to health care, technology and industry jobs, (2) sparse population which may inhibit efficiencies that depend on economies of scale, and (3) dependence on a single industry which can reduce a community's ability to withstand the effects of the downturn in that industry. These characteristics, typically tied to a natural resource or to low skill manufacturing, are often the root of the economic problems of the area. They are also the reason why many people choose to remain in a particular area because these characteristics describe the culture, the quality or way of life, of a particular community.

Other factors affecting a community include the adequacy of infrastructure for transportation, water and sewer, and communications; a favorable business climate in terms of credit availability and local business expertise; an adequate tax base and a favorable tax structure for social needs as well as development; employment opportunities and the availability of skilled workers.

Although rural and urban areas cannot change the characteristics that describe their area or the conditions that may impede economic development, they can exert influence on other factors that are critical to economic success. These efforts can spell the difference between a vibrant community and one that continues to lose population and business.

Some needs are clearly evident when describing Florida communities, particularly those in rural and nonmetro areas. There is a need to expand the pool of qualified leaders and to enhance the leadership skills of organization officeholders and local government.

Local leaders need skills to work with boards, commissions, government agencies and community organizations. Currently in Florida, leadership skills are lacking among staff in some local government offices and among members in civic and community organizations. Officers and members of community organizations frequently do not have the basic leadership skills that are needed to work in harmony with other members in pursuit of group goals. Organizations and boards frequently cannot find officers and committee members to provide continuity for the group. The result is the interests of a prominent few dominate the interests of the community. Citizens become disenfranchised and critical of local government and organizations that should serve the overall needs of the community.

The availability of local leaders is a prerequisite to economic development. Effective leadership can spur economic development by facilitating plans and projects for county, business, and financial institutions and others. In contrast, inadequate local leadership can contribute significantly to a lack of economic development. Leadership is inadequate when leaders do not have the perspective that is necessary to see opportunities for business development. Extension has experience in developing community leaders. Education and assistance in planning, conducting and evaluating local leadership programs is available. Curriculum modules for various facets of leadership training, including non profit organizational development and volunteer management are available.

There is a need to assist local leaders and citizens in obtaining and analyzing information about their community and its relationship with the larger society. Though much demographic and socioeconomic information is available, many people in small communities have limited experience in retrieving such information and applying it to decision making. In short, local leaders are making decisions based on limited information, sometimes acting ineffectively and reaping unintended consequences. Extension faculty have experience using U.S. Census information, as well as data from other sources, to help local leaders better understand their community. Extension can help people obtain appropriate data, assist with analysis, develop presentation materials, and prepare reports.

In some cases, needed information, such as residents' opinions about local needs and priorities or customers' views about the local business district, cannot be obtained from secondary sources but must be collected directly. Extension faculty have experience in assisting community leaders and local volunteers, including high school students, to develop a partnership for conducting community surveys. Extension can

help people plan the survey process, develop a questionnaire, select a sample, collect and analyze the data, communicate the results to community organizations, and identify ways to use the results.

There is a need to increase the number of and the success rate of present and potential owners of small business enterprises.

The economic growth in Florida and elsewhere in the United States is in small business development. Many small business enterprises are started each year and although some are still in operation after five years, most are not. These local entrepreneurs can provide economic growth and employment in communities throughout Florida. As a significant and growing part of the economy, small business owners need to be encouraged through education and training available in their community. Extension can provide appropriate training to help potential business owners understand the steps in starting and maintaining a business.

Many rural communities have adults with limited educational attainment and who lack the skills needed to compete for the newer type of technology-oriented jobs being created in the marketplace. Further, the loss of the "best and brightest" remains a serious problem in rural areas of the state. It is critical that good jobs get created in rural Florida in order to stem the loss of these young individuals.

There is a need to increase the number of informed citizens who can debate and resolve local issues that affect the entire community. Local leaders need to obtain tools for creating and involving a better informed public in debating and determining policy on issues which affect the entire community. Currently there is low participation among citizens in public policy issues. Further, public policy decisions are frequently dominated by special interests and have little input from citizen groups. Local leaders may not understand economic needs or the public issues from a perspective beyond self interest. They may see development in terms of competing interests such as agriculture versus environment or business versus conservation of natural resources. If equitable and acceptable solutions to issues and problems facing Florida citizens are to be implemented, citizens capable of making informed decisions must be involved. The increasing complexity of determining local public policy on a host of issues adds to the burden of rural communities. Extension can provide education on the generic process of public issues education as well as specific issue analysis and information on various complex problems that face urban and rural Florida.

Programs and Projects :
Smith-Lever - FL315
Smith-Lever - FL510
Smith-Lever - FL513
Smith-Lever - FL270

Performance Goals:

Key Program Components:

Internal and External Linkages:
4-H
American Society of Agricultural Engineers
Apalachee Regional Planning Council
Association of Enterprise Opportunity
Center for Entrepreneurial Leadership (Denver, CO)
Centers for Disease Control and Prevention
Chamber of Commerce
Civic Associations
Community Development Corporation
Community Equity Investments, Inc.
Consumer credit counseling services

Contractors and builders
County Housing Authority
Department of Insurance
Department of Public Safety
Division of Disaster Management, Florida Department of Community Affairs
Enterprise Florida (Orlando and Tallahassee)
Equipment Manufacturers Institute
Family Service centers
Fannie Mae Corporation
Farm Safety 4 Just Kids
Farmedic Program of the Florida State Fire College
FFA
Florida Association of Counties and Foundation (Statewide and in Tallahassee)
Florida Cattleman's Association
Florida Department of Agriculture
Florida Department of Agriculture and Consumer Services
Florida Department of Community Affairs
Florida Department of Labor
Florida Energy Extension Service
Florida Farm Bureau
Florida Fruit and Vegetable Association
Florida Highway Patrol
Florida Poultry Institute
Great Plains Center for Agricultural Safety and Health, headquartered at the University of Iowa
Gulf Applied Seafood, Inc.
Habitat for Humanity
Home building supply and businesses
Homebuilders Association
Homeowners and condo associations
Housing and Neighborhood Development
Housing Coalitions
Iowa's Center for Agricultural Safety and Health
Jackson County Economic Development Council
Jefferson County Library
Kauffman Foundation (Kansas City, Mo.)
Local banks
Marshfield Medical Research Education Foundation
National Association of Management and Technical Assistance Centers
National Children's Center for Rural and Agricultural Health and Safety
National Institute for Farm Safety
National Institute for Occupational Safety and Health
National Safety Council
North American Equipment Dealers Association
North Central Florida Regional Planning Council (13 counties in north central Florida)
North Florida Educational Development Corporation
Office of Trade, Tourism and Economic Development (Govenor's Office of Florida)
Planning and Zoning Department
Private industry from Florida commodities, including nurseries, sugar cane, citrus, livestock, dairy
Professional associations
Quincy Library
Regional Workforce Development Board
Selected Economic Development Offices in Florida (mostly rural)
Selected Rural and Urban Chambers of Commerce in Florida
Southeast Center for Agricultural Safety and Health, headquartered at the University of Kentucky
State Housing Initiative Partnership (S.H.I.P)

Title companies
U.S. Occupational Safety and Health Administration
UF Division of Continuing Education (local and statewide)
United Way
University of Florida College of Veterinary Medicine
US Economic Development Administration
USDA Farm Services Agency
USDA Forest Services
USDA Natural Resources and Conservation Services and Regional Conservation and Development (State Wide)
USDA Rural Business Cooperative Service
USDA Rural Development
USDA Rural Development (State Wide)

Target Audiences:

I. General public, boaters, shore residents, sport fishermen, divers, marina operators, resource agencies, local, regional and state elected and appointed officials
II. Homeowners and renters
I. Full-time and seasonal residents.
II. Managers of condominiums, hotels and motels.
III. Members and officers in local organizations; public officials; business owners; farmers; minority leaders; public service providers; and others with an interest in the community and its economy.
Iç. Community residents, members and officers of grass-root level organizations, youth mentors, youth, public officials, community service providers, and members of NGO's (non-governmental organizations) interested in the betterment of communities.

Evaluation Framework:

Educational programs and special events with marine conservation and/or boating safety themes will be evaluated through pre- and post-event surveys.

Examine knowledge and behavioral changes.

Assessment of impact indicators shown above and others that may be determined important will be made on an annual basis and reported to University of Florida administration and others as needed. A single instrument or method will be developed and utilized by the design team to insure validity and reliability of data collected and reported.

Program evaluation of impact indicators based on data from reports of program activities and follow-up with target customers.

Output Indicators:

Extension:

ç. Number of Individual Consultations
çI. Number of Group Learning Experiences
çII. Number participating in Group Learning Experiences
çIII. Number of Educational Materials Prepared

Research

N/A

Outcome Indicators:

Allocated Resources:

See section III. Tables

Education and Outreach Programs:
4-H Kid Power Can-Do Day Camps
Bi-monthly meetings with citizen advisory council for Environmental Learning Center
Conduct home purchasing, money management and home care
Demonstration Mini-House
Earth days and other events, libraries, stores
Homebuyer Education classes
Housing News articles
Housing newsletter
Internal /external networks
Living in Florida Study Course
Medi/print, video
SHIP Class Series

Program Need 33: Family and Consumer Sciences (Quality of Life)
Statement of Issue:
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 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%, Asians and Pacific Islanders at 15.3% and 12.2% for whites. Metropolitan areas have lower poverty (14.6%) than rural areas (17.2%).

The median income for 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 Survey 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 other (15.4%).

Income: During this decade individuals and families will continue to face unprecedented challenges as Florida's economy continues to improve slowly. According to the August 1994 Kiplinger's Florida Business Letter, the 1992 per capita income for Florida was $19,711 only slightly below the national average of $20,105. This was 9% higher than the $17,926 average for Southeastern states. However, the gap in income between the poorest and richest inhabitants has continued to grow. Earnings for most Americans fell from 1989 through 1993, yet the drop was sharpest among the low-end of the income scale according to U.S. News and World Report (May 30, 1994). It reported a new survey finding that the average Corporate CEO earns 149 times the income of the average factory worker and that 18% of full-time employees don't earn enough to keep a family of four out of poverty.
Savings: Many companies are phasing out guaranteed pensions, leaving workers to provide for their own retirement. Most people greatly underestimate the amount that will be needed for retirement. Older people are outliving their retirement funds or resources. Americans are saving a very small percentage of their incomes, less than one-fifth that of the Japanese and much less than most other industrial nations.

Credit: Most Americans continue to increase their use of credit. Eighty-three percent of U.S. households are carrying some type of consumer debt, excluding mortgages. Fourteen percent of credit customers admit to falling behind in their payments. Currently one-third of American families is seriously overextended and personal bankruptcy rates continue to climb. Consumer debt has risen more than twice as fast as either total consumption or disposable income since 1982.Many Floridians faces financial problems because they lack the skills and knowledge necessary to effectively utilize their available resources. Credit card debt is at an all time high, with many seriously over extended. On an average, most credit card users carry an unpaid balance of over a thousand dollars. Some are able to pay only the minimum balance monthly, thus generating costly credit charges. Meanwhile, savings are at an all-time low, posing a financial crisis in case of an emergency or unexpected expense.

Although the population is aging, savings for retirement are insufficient, even though there is growing concern over the future of Social Security and Medicare. Meanwhile many businesses are decreasing employee benefits such as health care and retirement plans to help control operating costs.

The transition from welfare to work brings the challenges of teaching participants money and time management along with self-responsibility. Many have little, if any experience in these areas.
The marketplace and products therein are changing rapidly due to automation, technology, and the global economy. Whether food, clothing, or other products, much merchandise is now sold in ready for use form instead of requiring any preparation or assembly. Buying is becoming more impersonal and automated. Not only are retailers using more self-service, the sales locations and methods used are moving from on-sight to distance transactions, such as Internet, fax, telephone and T.V. And, payment is made through electronic transfer.

Programs and Projects :
Smith-Lever - FL124
Smith-Lever - FL511
Smith-Lever - FL512
Smith-Lever - FL514
Smith-Lever - FL515
Smith-Lever - FL516
Smith-Lever - FL517
Smith-Lever - FL518
Smith-Lever - FL267

Performance Goals:

I. Understand how family behaviors affect quality of life in the context of existing social service and community environments to recommend policies and strategies for improvement

Output Indicators:

Extension:

II. Number of Individual Consultations
III. Number of Group Learning Experiences
Iç. Number participating in Group Learning Experiences
I. Number of Educational Materials Prepared

Research

Outcome Indicators:

I. Improvements in child wellbeing as measured by U.S. Department of Health and Human Services criteria
II. Improvements using demographic indicators of individual and family well-being including employment rates of youth by skill level. Activity indicators of daily living for older people, rates of substance abuse, and USDA food insecurity measures
III. The formulation of health, welfare and community policies by state agencies
Iς. Improved community and regional planning for housing development
ς. Innovative social service delivery mechanisms
ςI. Reduction in hazards and their symptoms such as injuries and illness

Key Program Components:

I. To provide educational programs which will help individuals and families improve their financial stability and position by gaining and maintaining control of their finances, improving their marketplace performance, and managing other resources.
II. To provide educational programs which will improve the family economic status by reporting a decrease in their debt level.
III. 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.
Iς. Collaborate closely with state and federal human service agencies

Internal and External Linkages:

I. AARP
II. Department of Transportation
III. EMT
Iς. Law Enforcement Agencies
ς. Retail Merchants
ςI. Office of the Florida Attorney General
ςII. Florida Department of Consumer Services
ςIII. Department of Banking and Finance
IΞ. U.S. Bureau of Census
Ξ. Local and Federal Regulatory Agencies
ΞI. Florida Department of Natural Resources
ΞII. Private and public landowners

AARP
American Cancer Society
American Psychological Association
American Red Cross
Americorp Volunteers
Area Health Education Centers (AHEC)
Association for Financial Planning and Counseling Education
Board of County Commissioners
Centers for Disease Control and Injury Prevention
Children's Home Society
City Recreation Departments
County Public Health Departments
County Senior Citizen's Associations
Even Start
Family and Community Education (FCE) Clubs
Farm Share
Guam Cooperative Extension Service

Healthy Families
Kiwanis International
March of Dimes
National Institute of Mental Health and CYFAR initiative
National professional associations (ADA, SNE)
National Safety Council
PTA Junior League
Puerto Rico Cooperative Extension Service
School Boards
Society of Prevention Research
Suwannee River Area Florida Health Education Center
Teen Parenting Programs
U.S. Department of Health and Human Services
USDA agencies
UF Center for Gerontological Studies
Sustainable Research Education Program (SARE)

Target Audiences:

ΞIII. Individuals and families with limited resources to include female heads of households, children, youth, older adults, and homemakers.

ΞIς. food stamp recipients, individuals and families.

Ξς. economically disadvantaged people who are at risk of hunger, food insecurity and poor nutrition. These audiences include youth, battered women, homeless persons, migrant workers, teen mothers, senior citizens, families with and without young children, various ethnic groups, persons with disabilities, people who are unable to find employment, and working people with low incomes who are eligible for or participate in the Food Stamp Program.

ΞςI. Middle-aged women and men, the elderly, full-time and seasonal residents.

ΞςII. Working adults, particularly those at high risk for obesity, diabetes, cardiovascular disease, or cancer; these include ethnic minorities and persons with limited resources including the working poor. Families with limited access to health care delivery due to attitudinal or organizational barriers will be targeted.

ΞςIII. Limited-income persons who are responsible for planning and preparing the family's food with special emphasis on pregnant teens/women and households with infants and young children.

ΞIΞ. Employed individuals, persons with limited reading skills and money, overextended consumers, working poor, and pre-retirement employees.

ΞΞ. Middle-aged men and women, the elderly, the very young expectant or lactating mothers, limited resource families, parents and caregivers of infants and children, persons most vulnerable for food-borne illnesses, policymakers, community leaders, coalitions of community groups, and human services agency personnel.

ΞΞI. Extension service personnel
Health professionals
Farm families
Farm and rural youth
Urban families

I. persons with limited resources, limited reading skills and money
II. persons with over extended credit, poor management practices, and poor consumer skills
III. pre-retirement employees
Iς. low and middle income consumers including those moving from welfare to work
ς. people of all races, ages, from youth to elderly and both English and Spanish speaking

Evaluation Framework:

ςI. Determine, through personal testimonies and through pre- and post- tests, the number of the targeted audience who adopted beneficial resource management practices.

ςII. 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: the 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, making money last from one pay check to the next, increase in level of money management principles achieved by youth, and knowledge of consumer rights and responsibilities.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:

I. Managing Your Resource Program
II. Money Management Skills for the Homeless
III. Dealing With Dollars - Inmate Money Management**
Iς. Consumer Rights and Responsibilities
ς. Money 2000
ςI. Successful Money
ςII. Resource Management for Native Americans
ςIII. Stretching Your Dollars - Spanish/English
IΞ. Who Gets Grandma's Pie Plate/Transfer of Non-titled Property**
Ξ. Safety Belt School - Buying a Car
ΞI. Recovery from Disaster - Fraud and Deception
ΞII. Too Good to be True - Fraud and Deception
ΞIII. Money Wise
ΞIς. Volunteer Financial Counseling Program

** *Multi-state activities*

Buckle Up Safety Program and Car Seat Restraints
Child development and parenting
Clothing Volunteers Training
Consumer Choices Training
Educational programs on family resiliency and stress and coping with work-family demands
Educational programs on parent and daycare/school/workplace communication
High School Financial Management Program
Home Alone – safety program for children
Leadership Development
Lean-by-mail Financial Learning
Lifesline Stroke Screening
Living in Florida's changing environment
Meetings Related to Labels, Advertising, Mail Orders, Fraud
Minority Peer Education Program
Money after 50
Money Management, Consumer Issues
Money Wise School Enrichment Programs
Newsletters/newspaper articles
Resource Management and Counseling Series
Seat Belt Safety
Teen Parenting
Welfare Reform Participation
Women's Financial Information Program

Women's Financial Management
World's Greatest Baby Shower
Youth at Risk

Program Need 34: Youth and Human Development
Statement of Issue:
The health and well-being of our youth is a growing concern throughout the state. Nutrition and fitness is of major importance to normal growth and development and to the maintenance of health throughout the human life cycle. Nutrition and health of young children, especially those growing up in poverty, and the special issues faced by adolescents are of a primary concern. Additional adolescent issues that compound their health and well-being include increased evidence of early sexual activity, drug and alcohol use, accidental and intentional injuries (including suicide), and teenage violence. Nutrition for athletics has also been identified as an issue. Difficulty with family finances is often a key factor in families. School-age youth (ages 4-12) directly influence more than $160 billion in annual family household purchases. Peers pressuring teenagers for material goods not only impacts youth behavior but also the financial status of families. Finding the right volunteers to work with our youth is of primary importance in developing strong youth programs, but that in itself has caused some concerns and issues.

Key Issues Affecting Florida's Youth

nutrition and fitness
substance abuse: drugs, alcohol, smoking
personal well-being and safety
youth self-esteem; ability to cope/manage peer pressure

Major Goals & Actions Proposed, FY 2000 - 2004

Food, nutrition and health education curriculum development; special emphasis will be placed on development of new materials for teens. Continue implementation support for CHOICES: Charting the Future for Teen Parent programs. This is done in cooperation with Home Economic specialists and agents.

Health education, especially in areas of health management, i.e. prevention of chemical abuse among youth; prevention of AIDS/STDs is the focus of emerging health education needs. It is proposed that new curriculum resources be identified and programs implemented with counties as needed.

Personal development, appearance and care, including personal appearance and hygiene, clothing care, selection and construction for K-12 youth.

Consumer education and resource management, including consumer choices, money management and financial planning education for elementary and high school youth.

Personal safety education including seatbelt safety; self care education for latch key youth, child care education, i.e. babysitting; bicycle safety; first-aid; and food safety.

Key issues involving volunteerism:
Several societal changes have impacted volunteerism, in general, and, more specifically, the volunteer systems that support the Florida 4-H Youth Development Program. These changes include:

More diversity among 4-H volunteers due to expansion of 4-H program delivery systems and outreach to new audiences through a variety of community agencies such as neighborhood centers or housing projects.

Less availability of parents for 4-H volunteer positions as family structures change and time demands intensify among single working parents and dual employed parents.

More concern for child protection and safety as volunteers are selected due to the increased incidence and/or reporting of child abuse.

These societal changes have required 4-H to address new issues associated with the development, training, and management of volunteers. These issues include:

Modification of training and development programs to address volunteer diversity including cultural/ethnic beliefs and practices, level of educational attainment, and age.

Adjustment of volunteer roles and training/support methods as length of time available to complete tasks is shorter for many individuals.

Modification of middle management roles to address program changes.

Volunteer screening.

Key Issues Affecting Florida's Youth:

Caring adults that provide sustained positive relationships and safe environments for youth from diverse backgrounds.

Positive adult role models that help youth learn appropriate interpersonal, workplace and citizen roles.

Adults to partner with youth in learning situations.

Opportunities to serve as leaders/helpers for other youth as well as with other family and community members.

Programs and Projects:
Smith-Lever - FL211
Smith-Lever - FL212
Smith-Lever - FL213
Smith-Lever - FL214
Smith-Lever - FL215
Smith-Lever - FL216
Smith-Lever - FL217
Smith-Lever - FL218
Smith-Lever - FL219
Smith-Lever - FL701
Smith-Lever - FL703
Smith-Lever - FL711
Smith-Lever - FL712
Smith-Lever - FL713
Smith-Lever - FL714
Smith-Lever - FL715
Smith-Lever - FL716
Smith-Lever - FL717
Smith-Lever - FL718
Smith-Lever - FL719

Performance Goals:

I. Assist decision-makers (individual, family, organization, community, or a larger entity) in assessing specific socioeconomic issues or the socioeconomic implication of more general rural/urban concerns.

Key Program Components:

I. Collect, analyze, and distribute primary and secondary data.

Internal and External Linkages:
Department of the Air Force
Duval County School District
EE Regional Service Projects - Dept of Education

Elderhostel Inc.
FL Dept of Environmental Protection - Office of Environmental Education
Florida Association of Voluntary Agencies for Caribbean Action
Florida Department of Environmental Protection
Florida Division of Forestry
Florida Forestry Association
Florida House of Representatives – 4H Legislature
Highlands County School District
International 4-H Youth Exchange – International Exchanges
Ministry of Agriculture, Grenada, West Indies – Staff Development
National 4-H Council – Citizenship Washington Focus
Office of Environmental Education - FL Gulf Coast University
Orlando Science Center
Project Learning Tree
St. Augustine School for the Deaf and Blind
St. Johns River Water Management District
State Committee on Environmental Education
United States Forest Service
US Fish and Wildlife Service
USDA Families, Nutrition and 4-H – International Exchange

Target Audiences:

I. Pre-teens and adolescents
II. School officials and personnel
III. Public sector representatives
Iς. Parents/Guardians
ς. County Extension faculty
ςI. 4-H volunteers
ςII. Teachers
ςIII. 4-H Faculty
IΞ. Business and industry
Ξ. County, state and national government officials
ΞI. 4-H advisory committees
ΞII. County 4-H foundation boards or fund volunteers
ΞIII. Citizens concerned about community youth issues
ΞIς. Limited income youth of 4-H age, 5-18 years
Ξς. Youth, K - 12
ΞςI. Community youth coalitions
ΞςII. Volunteers
ΞςIII. Child care and after school providers
ΞIΞ. Pregnant teens and teenage parents
ΞΞ. Ages 8-12, grades 3-12 (General public speaking/demonstration/arts events)
ΞΞI. Grades 4-6 (Tropicana Public Speaking program)
ΞΞII. Youth families and community
ΞΞIII. Youth ages 5-18

Evaluation Framework:

I. Evaluation methods will be developed in concert with county faculty involved in this core program.
II. Parent/leader/teacher surveys and feedback
III. Demonstrated competencies through events and activities
Iς. ES-237 enrollment data

ς. Specific program indicators and evaluation methods will be developed in cooperation with design teams/program task forces and shared with county faculty during Fall 1995.

ςI. Evaluation of Environmental Education Programs will be done:
Knowledge gained as a result of educational experience
Behavior change as a result of educational experience
Impact on community, family, individual; (Do programs make a difference?)

I. Methods will be designed to meet local needs and may include pre-post tests and observations; demonstrated competencies while participating in supporting events and activities; focus groups; inventory of responsible environmental actions completed by youth participants.

II. Indicators and evaluation methods will be defined and specified as specific programs are planned.

III. Pre/post tests - assess knowledge gained

Iς. Demonstrated scientific and technical competencies through events and activities

ς. Life Skill Questionnaire - Assess life skills developed

ςI. The 4-H EFNEP program prepares federal reports annually on the demographics of youth and volunteers enrolled in the program. Evaluation data on the dietary changes in youth will also be reported. The indicators to be reported will include:
Percent of youth eating a variety of foods.
Percent of youth with increased knowledge of the essentials of human nutrition.Percent of youth selecting low-cost nutritious foods.
Percent of youth improving practices in food preparation and safety.

I. The 4-H EFNEP program will use group assessment tools to meet this reporting requirement.

II. 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.

III. Demonstrated competencies through events and activities

Iς. Follow-up surveys to identify leadership and citizenship activities completed after in-depth conferences and exchanges.

ς. Specific program indicators and evaluation methods will be developed in cooperation with design teams/program task forces and shared with county faculty during Fall 1995.

ςI. Evaluation of Environmental Education Programs will be done:
Knowledge gained as a result of educational experience
Behavior change as a result of educational experience
Impact on community, family, individual; (Do programs make a difference?)

I. Methods will be designed to meet local needs and may include pre-post tests and observations; demonstrated competencies while participating in supporting events and activities; focus groups; inventory of responsible environmental actions completed by youth participants.

Output Indicators:

Extension:

II. Number of Individual Consultations

III. Number of Group Learning Experiences

Iς. Number participating in Group Learning Experiences

ς. Number of Educational Materials Prepared

Research

Outcome Indicators:

I. Changes such as those in the structure of agricultural operations, consumer demand, environmental enhancement, land-use planning, adoption of technology, availability of adequate housing, and participation in continuing education programs.
II. Education of decision-makers at local, regional, and state levels; those initiating development projects; and those setting policies.

Allocated Resources:
See section III. Tables

Education and Outreach Programs:
4-H EFNEP programs in schools and summer day camps at special community sites
4-H Natural Resource Stewardship and conservation education, Ecology Field Day
Career exploration and development, through hands-on mentoring and/or exchange programs
Community Pride Workshops
Educational programs to teach employability skills for future jobs
Public relations and program visibility efforts in the targeted communities
Workshop, curriculum materials, state newsletter
Youth job readiness skills training with 4-H Clubs and school enrichment programs

Updated Version: July 12, 1999

III. TABLES: includes multistate, Updated 8/17/1999

p	Project Number	Funding Type	Title	Program Need #	Short Inter Long term	Multi University	Multi-State	Extension Research Integrat Yes/No	Co inv or pul
	FL101	Smith-Lever $24,212	Practices for Sustainable Agronomic Production in Florida	2	I				
	FL102	Smith-Lever $30,184	Florida Forage Production for Livestock and Dairy	8	S\I	Univ. of GA, Auburn Univ., Atlantic Univ.	GA, AL	Y	
	FL103	Smith-Lever $24,107	Improving the Production, Efficiency and Marketability of Beef Cattle in Florida	14	I				
	FL104	Smith-Lever $10,725	Strategies for Successful Dairying in Florida	14	L	WV Univ., Univ. of MN, Univ. of TN, Univ. of WI, Univ. of CA	NY, MI, ND, SD, NE, KS, OK, AR, TX, LA, MS, AL, TN, KY, WV, VA, MD, NC, SC, VT	Y	

	FL105	Smith-Lever $9,597	Management of Water and Nutrients in Florida's Nursery Industry	7	L	NC State Univ., Auburn Univ., VA Tech, OR State Univ.	NC, AL, VA, OR	Y	

	FL107	Smith-Lever $36,710	Vegetable Production, Harvesting, and Handling Efficiencies in Florida	2	I	NC State, Texas A&M, Univ. of MS, OH State Univ., Univ. of CA, OK State Univ., Univ. of MA	NC, TX, MS, CA, OH, MA, OK		
	FL108	Smith-Lever $28,857	Citrus Management in Florida	6	I	Cornell, TAMU, Clemson, LSU, Univ. of Various States, Texas A&M Univ., ARS,	LA, NY, TX, MN, WS, WA, CA, SD, OR, WV		
	FL111	Smith-Lever $6,937	Tropical Fruit Crops Management in Florida	6	S,I,L	USDA, Univ. HI, Univ. of CA, Univ. of Virgin Islands, Fairchild Tropical Garden, USDA Subtropical Hort Res Station, Hort Sciences Dept and Trop REC, Agri Tech Utilization and Transfer Project-Arab Republic of Egypt, Ministry of Agri and Land Rc	HI, PR, CA, US Virgin Islands, Egypt	Y	
	FL112	Smith-Lever $23,512	Ornamental Plant Production and Integrated Pest Management in Florida	7	I				
	FL115	Smith-Lever $9,537	Florida's Regulatory Environment	1	I				
	FL116	Smith-Lever	Turfgrasses in Florida	7	I				
	FL117	Smith-Lever $3,112	Profitable and Sustainable Poultry Production in Florida	14	S/I/L	Univ. of MD, VA Tech	GA, AL, MD, VA		
	FL119	Smith-Lever $6,732	Business Management for Horticultural Enterprises in Florida	15	I				

	FL120	Smith-Lever $17,782	Managing Competitiveness in Florida Agriculture Through Management Finance, marketing and Policy	14	S/I/L	Auburn Univ. , Univ. of GA, LSU, MS State Univ., NC State Univ. , Clemson Univ., Univ. of TN, Univ. of AK, Univ. of KY, OK State Univ., Texas A&M Univ. , VA Tech, CO State Univ., Univ. of IL, IA State Univ., KS State Univ., Cornell Univ., OH State Univ., PA State Univ. , Fort Valley State Univ. , SC State Univ., Univ. of DE, Univ. of MA, MI State Univ.	AL, GA, LA, MS, NC, SC, TN, AK, KY, OK, TX, VA, CO, IL, IA, KS, NY, OH, PA, DE, MA, MI	Y	
	FL121	Smith-Lever $24,321	Small Farm Sustainable Agriculture Alternative Opportunities and Crops in Florida	2	I	FAMU, NC State Univ., NC A&T Univ., Dover REC	NC, Canada	Y	
	FL122	Smith-Lever $22,843	Pesticide Applicator Training in Florida	25	I	Univ. of S. FL		N	
	FL123	Smith-Lever $3,100	Pesticide Impact Assessment for Florida	25	I/L	Cornell Univ., NC State Univ., Univ. of CA	NY, NC, CA, AL, GA, FL, SC, VA, MS, LA, AR, TX, OK, KY, TN, PR, Virgin Islands	Y	
	FL127	Smith-Lever $10,067	Florida Urban Gardening Program (UGP)	7	I/L	UF		N	
	FL128	Smith-Lever $4,693	Sustaining the Economic Viability of the Florida Dairy Industry	14	L	Univ. of GA, Auburn Univ.	GA, AL		

	FL129	Smith-Lever $3,607	Profitable and Sustainable Sugar Cane Production in Florida	2	I	LSU	LA	Y	
	FL261	Smith-Lever $1,333 (1862) $186,167 (1890)	Small Animal and Small-Scale Farm Profitability and Sustainability in Florida-1890	2 13	I	UF, 1890 Institutions and Tuskagee Univ., NC State Univ., SC State Univ., VA State Univ., Southern Univ., CO State Univ., MI State Univ., Limon Correctional Facility, San Augustine County, TX Univ., Cornell Univ., Univ. of CT, Univ. of Ghana	NC, SC, VA, CO, MI, TX, NY, CT, Guam, PR		
	FL265	Smith-Lever 3,728 (1862) $186,167 (1890)	Improving Profitability of Small Scale Crop Production in Florida 1890	2	I	UF			
	FL267	Smith-Lever $186,167	Financial Management and Decision-Making in Florida - 1890	33	I	UF, Fort Valley State College, Univ. of Ghana	Guam, PR, GA		
	03132	CSREES $1,644	Analyses on Miniature and the Two Sucrose Synthase in Maize PhP	5	I		Regional		
	03159	Hatch $22,246	Factors Affecting Mineral Utilization, Immune Response and Performance of Poultry PSE, VME	12	I			Y	Y
	03178	Hatch $42,076	Bioavailability of Mineral Elements for Ruminants and Nonruminants ANS	12	I			N	Y
1	03180	Hatch $160,359	Evaluation of Forage Germplasm under Varied Management AGR,JAY,QUN, FTP,ONA	5	L			Y	Y

	03199	Hatch $10,392	Influence of Range and Pasture Management on Plant Production, Phenological Development and the Environment IMM	8	I					
	03228	Hatch $13,521	Physiological and Biochemical Effects of Irradiation Upon the Carribean Fruit Fly ENY	17	I					
	03242	CSREES $0	Breeding Snap and Red Kidney Beans for Golden Mosaic Resistance and Heat Tolerance HOS	1						
	03247	Hatch $38,201	Improvement of Beef Cattle in Small and Large Multibreed Populations FTP, PhP	9	L		Bolivia, Mexico	N	Y	
	03249	Hatch $16,876	Physiological and Biochemical Studies of Trypsin Modulating Oostatic Factor in Insects FME	9	L				Y	
	03251	Hatch $69,075	Control of Growth and Development in Floriculture Crops	7	I			N	N	
	03257	Hatch $12,555	Development of Cultivars and Specialized Genetic Stock for Basic Research in Common Bean HOS	5	I			N		
	03259	Hatch $62,781	Biological Control of Scapteriscus Mole Crickets and its Economy ENY,FRE	17	I					
	03261	Hatch $4,979	Adoption of Improved Management Practices in Selected Florida Agricultural Industries	16	L			N	N	
	03267	RRF $170	Freeze Damage and Protection of Fruit and Nut Crops	4	I		Regional	Y	Y	

	03269	Hatch $27,354	Environmentally Friendly Growth Regulants for more Efficient Crop Production AGR	1	I				Y
	03278	Hatch $26,307	Reducing Production Costs in Young Citrus Tree Management	6	I			Y	Y
	03279	Hatch $2,968	Management Stress Influence on Behavioral, Reproductive and Productive Traits in Equine	9	I			N	Y
	03280	Hatch $88,711	Characterization, Etiology, Epidemiology and Control of Virus and Graft-Transmissible Disease of Citrus FTL,FTP,LAL,PLP	17	I				
	03283	Hatch $27,265	Integrated Management of Nematode Pests of Citrus LAL	17	I			N	Y
	03303	RRF $4,697	Improved Systems of Management for Pecan Insect and Mite Pests MON	17	I		Regional		
	03304	Hatch $33,635	Ecology and Management of Plant-Parasitic Nematodes ENY,HAS	17	I				N
	03305	Hatch $14,851	Comparison of Two Management Programs on the Growth and Incidence of Decline (Blight) of Citrus Trees FTP,PLP	6	I				
	03310	Hatch $16,843	Genetic Improvement of Forage Legume Species AGR	5	L			N	Y
	03321	Hatch $19,659	Management of Weeds in Ornamental Crops	18	I			Y	Y
	03325	CSREES $13,550	Computer Programs for Optional Supplementation of Cattle Grazing Tropical Pastures	12	I		Regional	N	N

	03326	CSREES $33,836	Citrus Tristeze Virus: Detecting and Monitoring New Strains in the Caribbean Basin LAL,PLP	6	I		Regional		
	03329	CSREES $29,439	Development of Bioherbicides for Pigweeds and Amaranths and Nutsedges HOS,PLP	18	I		Regional		
	03333	CSREES $36,640	Decision Support System for Vegetable Production AGE,HOS	1	I	Univ. of HI	HI Regional	Y	Y
	03336	Hatch $9,813	Phylogenetic Relationships of Pezizales (cup-fungi) and Tuberales (truffles)	4	I				
	03337	RRF $0	Research in Support of a National Eradication Program for Pseudorabies VME	9	I			N	Y
	03354	CSREES $51,178	Characterization of Transcription Factor IIB in Plants	4	I		Regional	N	Y
0	03356	Hatch $26,218	Nitrogen BMP for Citrus to Minimize Potential Nitrate Contamination of Groundwater LAL	6	I			N	Y
	03363	CSREES $45,231	Strategies to Optimize Reproduction in Heat Stressed Dairy Cattle AGR	12	I		Regional	Y	Y
8	03364	Hatch $102,023	Biology and Management of Arthropod Pests of Vegetables BGL,BRA,HOM,IMM,QUN, SAN	17	I			Y	Y
	03365	CSREES $34,045	Fructose-2, 6-Bisphosphate and Citrate: Their Roles in Regulation of Carbohydrate Metabolism in Citrus Fruits and Leaves FOS	6	I		Regional		

	03370	RRF $33,048	Natural Products Chemistry as a resource for Biorational Methods of Insect Control LAL	17	I		Regional	N	Y
	03374	Hatch $29,054	Genetic Improvement of Forage Grass Species PSE	5	I			N	N
	03376	RRF $17,780	Genetic Manipulation of Sweet Corn Quality and Stress Resistance BGL,HOS	5	I		Regional	N	Y
	03386	Hatch $20,812	Dynamics and Management of Plant-Parisitic Nematodes of Turfgrass	17	I			Y	N
	03390	CSREES $60,957	Chromatin Structure and Gene Expression in Plants	4	I		Regional	N	Y
	03391	CSREES $81,731	Minor Use Animal Drugs: Southern Region VME	9	I		Regional		Y
	03402	Hatch $49,377	Integrated Pest Management as an Alternative for Control of Soilborne Pests of Vegetable Crops BPA,ENY,HOM,HOS,IAM,PLP, QUN	17	I			Y	Y
	03408	Hatch $46,755	Genetic Engineering of Osmoprotectant Levels to Enhance Stress Tolerance in Citrus	6	I			N	Y
	03410	Hatch $22,532	Hatchability of Avian Eggs: Factors Affecting Embryo Viability PSE	9	I				Y
	03411	Hatch $0	Integrated Methods for Assessing Economic Properties of Ecological Systems FRE	14	I			N	Y

	03413	Hatch $31,851	Development of Improved Carrot Varieties for Florida HOS,SAN	5	I		OR		Y
	03415	Hatch	Development of Pest Management Systems for the Control of Vegetable Diseases PLP,IMM	17	I				N
	03416	Hatch $12,936	Weed Management in Vegetable Crops Grown in Flatwoods Soils BRA	18	I				Y
	03419	Hatch $18,871	Toxicology of Agriculturally Important Insect Pests of Florida ENY	17	I			N	Y
	03422	CSREES $774,505	Southern Region Program to Clear Pest Control Agents for Minor Uses	17	I		Regional		Y
	03424	CSREES $17,922	Functional Analysis of Plant Heat Shock Transcription Factors MCS	4	I		Regional	N	Y
	03425	CSREES $40,133	Metabolic Engineering of Glycine Betaine Synthesis and Plantstress Resistance HOS	4	I		Regional	N	Y
	03427	Hatch $17,624	Recyclable Organic Solids in Conservation Tillage Multiple Cropping Systems	1	I			N	Y
	03430	CSREES $21,256	Rapid and Sensitive Serological Techniques for the Detection of Geminiviruses in the Caribbean Area PLP	17	I		PR Regional		N
	03431	CSREES $32,908	Evaluation of an Antagonistic Agent Produced by Xanthomonas campestris pv. Vesicatoria as a Biological Control Agent PLP	17	I		Regional		

	03432	CSREES $29,407	Development of PCR Markers for Bacterial Spot Resistance Genes PLP,HOS	17	I		Regional	N	N
	03437	CSREES $26,813	Management of Beangolden Mosaic Virus in Florida HOM,BRA	17	I		Regional		
	03438	CSREES $36,273	Development of Biological Control Techniques for Management of the Pepper Weevil BRA	17	I		PR, Mexico Regional	Y	N
	03441	CSREES $42,234	Potyviral-Resistant Seedless Watermelon and Muskmelon for the Caribbean Region PLP,LBG	5	I		Regional	N	Y
	03442	Hatch $5,660	North American Katydids and Crickets(Orthoptera: Terrigonidae and Gryllidae) ENY	17	I			N	Y
	03443	CSREES $22,696	Resistance of Cucurbita Species to Sweet Potato Whitefly and Silverleaf ENY	17	I		Regional		
5	03445	CSREES $37,352	Genetic Engineering of Bacteria for Ethanol Production	4	I		Regional	N	Y
	03446	CSREES $46,471	Productivity and Profitability of Dairy Systems Based on Grazed Tropical Forages	8	I		Regional	N	Y
	03454	CSREES $55,188	Genetic Transformation of Mature Meristematic Tissues in Perennial Plants HOS	4	I		Regional	N	N
	03457	RRF $34,745	Phenology, Population Dynamics, and Interference: A Basis for Understanding Weed Biology and Ecology JAY,HOS,BGL	18	I		Regional	N	Y

	03458	RRF $19,910	Diversity and Interactions of Beneficial Bacterial and Fungi in the Rhizosphere LAL,SOS	1	I		Regional		
	03470	CSREES $55,772	Intron-Enhanced Gene Expression in Maize HOS	4	I		Regional	N	Y
	03472	CSREES $5,750	Biological Control Working Group Activities	17	I		Regional		
	03474	CSREES $27,991	Multifactorial Regulation of Porcine IGFBP-2 Gene Expression ANS,DAS	9	I		Regional	N	Y
	03475	CSREES $0	Brain Proteins in Plants: The Arabidopsis GF14 Gene Family	4	I				
	03477	Hatch $16,010	Developing Methods for Predicting Human Epidemics of Mosquito-borne Encephalitis Virus in Florida FME	9	I				
	03486	CSREES $56,230	Identification of DNA Unique to the Tomato Fusarium Wilt and Crown Rot Pathogens PLP	17	I		Netherlands, Belgium, UK,Regional	N	Y
0	03490	RRF $58,324	Biological Control of Selected Arthropod Pests and Weeds APO,HOM,ENY,PLP,MON,LAL	17	I		Regional	Y	Y
0	03493	RRF $45,527	Development and Integration of Entomopathogens into Pest Management Systems LAL,ENY	17	I		Regional	Y	Y
	03496	Hatch $37,912	Polyphasic Analysis of Xanthomonads Associated with Horticultural Crop Plants in Florida PLP,LAL,BRA,BGL	17	I			Y	Y

	03498	RRF $1,123	Evaluation and Development of Plant Pathogens for Biological Control of Weeds	18	I		Regional	N	N
	03504	RRF $16,559	Biological Control and Management of Soilborne Plant Pathogens for Sustainable Crop Production BGL,FTL	17	I		Regional		Y
	03506	Mc-St $13,604	Defense –related Genes in Forest Trees FOR	3	I			N	Y
	03508	RRF $17,226	Interior Environment and Energy Use in Poultry and Livestock Facilities	9	I		Regional		
	03523	Hatch $15,849	Management of Diseases of Tropical Foliage Crops	7	I				
	03524	Hatch $18,002	Identification, Epidemiology, and Control of Viruses Infecting Ornamental and Related crops PLP,BRA	17	I				
	03525	RRF $6,555	Utilizing Potassium Buffering Capacity to Predict Cotton Yield Response to Potassium Fertilizer QUN	1	I		Regional		Y
	03528	CSREES $16,966	Improving Flood Tolerance and Horticultural Characteristics of Annona Species HOM	1	I		Regional	Y	Y
	03529	CSREES $33,782	An Evergreen Blueberry Production System for Tropical and Subtropical Climates HOS,IMM	1	S		PR	Y	Y
	03533	CSREES $30,677	Breeding and Genetic Engineering for Forage, Yield, Quality and Persistence.	5	I		Regional	N	N

	03534	CSREES $21,942	Classical Biological Control of Tephritid Fruit Flies with Parasitoids from East Africa HOM	17	I/L	TX A&M Univ. of HI	Kenya, TX, HA, Regional	Y	N
	03535	CSREES $36,619	Utilization of Municipal Waste Products as Agricultural Soil Amendments FTP,HOM	1	I		Regional	Y	Y
	03538	CSREES $36,640	Pheromone-based Control of the Cayenne Tick, Amblyomma cajennense VME	9	I	Old Dominion Univ.	Trinidad Regional	N	N
	03540	RRF $0	Genetic Improvement of Bean (Phaseolus vulgaris): Yield, Disease Resistance, and Food Value HOM	5	I			Y	Y
	03541	Mc-St $104,216	Forest Productivity, Health and Sustainability FOR	3	I			N	Y
	03543	Hatch $3,870	Establishing Trees in Urban Landscapes	7	I			Y	Y
	03544	Hatch $13,146	Improved Nutrition and Irrigation of Ornamental Plants	7	I			Y	Y
	03552	Hatch	The Use of DNA Microsatellite Markers to Predict Bovine Calpastatin Gene Activity ANS	2	I				
	03554	Hatch $5,536	Flower Initiation and Development of Floriculture Crops	7	I				
	03555	Mc-St $0	Monitoring and Decision-Support Systems in Forestry FOR	16	I			N	Y
	03560	CSREES $53,476	Role of Nuclear Targeting Signals and Repeats in Xanthomonas AVR/PTH Proteins PLP	4	I		Regional		

	03562	Mc-St $5,093	Epidemiology and Management of Fusiform Rust	3	I				
	03564	Hatch $6,210	Micropropagation Protocol Development for Production of Native Wetland, Aquarium and Water Garden Plants	7	I				
	03565	CSREES $46,206	Pathogenicity Determinants on a Dispensable Chromosome of Nectria Haematococca PLP	4	I		Regional	N	Y
	03572	Hatch $0	Byproduct Feedstuffs: Rumen Degradability of Carbohydrate and Fat Fractions and Effects on Feed Efficiency	12	I			Y	Y
	03576	CSREES $15,224	Molecular Cloning, Structure and Expression of and Endometrial DNA-Binding Protein ANS	9	I		Regional	N	Y
	03577	CSREES $19,879	Field Test of a Transgenic Arthropod	17	I		Regional	Y	Y
	03579	CSREES $0	Induction of Embryonic Gene Activation by Heat Shock	9	I				
	03580	CSREES $61,228	Progesterone-Induced Uterine Immunoregulatory Proteins DAS	9	I		Regional	N	Y
	03581	CSREES $15,572	Map-Based Cloning of Ctv, a Gene Conferring Resistance to Citrus Tristeza Virus	17	I		Regional		
	03586	Hatch	The Edpidemiology and Control of Strawberry Diseases	17	I				Y
	03592	RRF $0	Integrated Management of Arthropod Pests of Livestock and Poultry	9	I			Y	N
	03600	Hatch	Morphological and Physiological Response of Chimeral Plants to Environmental Factors	7	I			N	N

	03601	Hatch	Identification of Genetic and Physiological Mechanisms of Thermotolerance in Lettuce Seed HOS	5	I			N	Y
	03602	Hatch	Taxonomy and Biosystematics of Cultivated Plants	7	I			Y	Y
	03603	Hatch	Enhancing the Sustainability of Commercial Peanut Production through Improved Disease Management	17	I				
	03607	Hatch	Bionomics and Management of Hemipterous Pests of Woody Ornamental Plants and Turfgrass in South Florida	7	I				
	03609	Hatch	Introduction and Evaluation of Ornamental Plants	7	L			Y	Y
	03610	CSREES $13,671	Pesticide Impact Assessment Program for Florida	17	I		Regional		
	03618	Hatch	Savanna Ecology and Management: Role of Fire, Grazing, and Exotic Species	8	I			N	N
	03620	Hatch	Weed Biology and Control for Turfgrass and the Landscape	18	I			N	Y
	03623	Hatch	Biology and Management of Diseases Affecting Vegetable Crops in North Florida	17	I			Y	Y
	03626	CSREES $0	Enhancement of Biological Control for Management of Silverleaf Whitefly in Vegetables	17	I		PR, Mexico	Y	Y
	03628	CSREES $8,843	Role of Ethylene Synthesis and Perception in the Aquistion of Abscission Competence of Abscission Competence HOS	4	I		Regional		
	03629	CSREES	Minimal Processed Juices and Pre-cuts from Tropical and Subtropical Fruits FOS	2	I		Regional	Y	N

	03630	CSREES $28,509	FY-1997 Southern Region Pesticide Impact Assessment Program	17	I		Southern Region	Y	N
	03631	Mc-St	Short-rotation Woody Crops for Florida FOR	3	L				
	03634	CSREES	Seasonality and Management of Diaprepes abbreviatus in South Florida Systems	17	I		Caribbean Region	Y	Y
	03635	CSREES	Meat Goat Gastro-Intestinal Parasitic Worms Resistant to Deworming Drugs	9	I	FAMU	PR		N
	03636	CSREES	Assessing Forage Feeding Value for Improved Livestock Production in the Tropics	12	I				N
	03637	CSREES	Short-vined Tropical Pumpkins: Improvement, Seed Production, and Cultural System BRA,LBG	5	I			N	
	03642	CSREES	African and European Honey Bee Introgression Followed with PCR-RFLP Markers	9	I				
	03643	CSREES	Allosteric Variants of Maize Endosperm ADP-Glucose Pyrophosphorylase Studied in E. Coli	4	S			N	Y
	03650	CSREES	Evaluation and Development of Bioherbicides for Pigweeds and Nutsedges in Sugarcane	18	I		CA,	N	Y
	03651	RRF	Breeding to Optimize Maternal Performance and Reproduction of Beef Cows in the Southern Region ANS,BRO	9	I	Subtropical Ag Res Station	St. Croix, Africa		Y
	03652	CSREES	Integrating the Various Stress Responses of ADH by invivoFootprinting HOS	4	I				

	03654	CSREES	Inter-field Movement of Silverleaf Whitefly in an Area-wide Crop System	17	I			N	Y
	03658	CSREES	The Arabidopsis GF14/14-3-3 Family: Structure and Function HOS	4	I				
	03659	RRF	Metabolic Relationships in Supply of Nutrients for Lactating Cows	12	I				
	03663	CSREES	Genetic Basis for Antigenic Variation in Babesia Bovis	9	I				
	03664	CSREES	Role of Ethylene Perception in Defense Responses to Pathogen Infection in Tomato	17	I				N
	03667	Hatch	Molecular Improvement of Peanut and Sugarcane	5	I			N	N
	03668	CSREES $808	Induction of Embryonic Gene Activation by Heat Shock	9	I		Regional	N	Y
	03675	RRF	Regulation of Photosynthetic Processes HOS	4	I			N	N
	03683	Mc-St	Quantitative Genetics and Tree Improvement of Southern Pines FOR	3	I				N
	03686	CSREES	Regulation of the C1 Gene of Maize HOS	4	I			N	Y
	03700	Hatch	Plant Growth Regulators to Enhance Profitability of Fresh and Processed Florida Citrus	6	I			Y	N
	03704	CSREES	A Multimedia Instruction and Learning System for Higher Education	16	I			Y	N
	03706	Hatch	Reproduction Biology and Gametophytic Selection in Higher Plants AGR,QUN	5	I				

	03711	Hatch	Turfgrass Fertility Management and Environmental Impact	7	I			Y	N
	03713	RRF	Plant Genetic Resources Conservation and Utilization AGR,JAY	5	I			N	N
	03714	CSREES	Purification and Structural Analysis of Native Cold Stress Proteins ENH	4	S			N	N
	03715	CSREES	Chromatin Structure and Gene Expression in Plants	4	I				
	03716	CSREES	Engineering Choline and Glycine Betaine Synthesis and to Enhance Stress Tolerance HOS	4	S			N	N
	03720	CSREES	Engineering Bacteria for Fuel Ethanol Production	2	I				
	03721	CSREES	Caribbean Basin Tropical and Subtropical Agricultural Research (T-STAR) ANS,AGE,AGR,REA,HOM,APO ,BRA,BNY,HOS	4	S		Caribbea n		N
	03724	CSREES	Heat Stable Mutants of Maize Endosperm ADP-Glucose Pyrophosphorylase HOS	4	I	IA State Univ.		N	N
	03728	CSREES	Targeting of Polyunsaturated Fatty Acids in Antiluteolytic Diets to Improve Embryo Survival DAS	9	I			N	N
	03731	CSREES	Southern Region PIAP Special Regional Project	17					
	03734	CSREES	Detecting Released Transgenic Strains of an Entomopathogenic Fungus	17	S			Y	
	03735	CSREES	Characterization of Transcription Factor IIB in Plants	4	S			N	N

	03738	CSREES	Biological Control and Spatial Dynamics of the Silverleaf Whitefly	17	I			N	N
	03739	CSREES	Investigation of Tomato Yellow Leaf Curl Virus Outbreak in South Florida	17	S				N
	03741	Hatch	Food Technology Research Support to Florida Agriculture Industries in Value Adding Enterprises HOS	2	I			Y	N
	03742	CSREES	Structure and Regulation of the Porcine Aromatase Gene Family HOS	9	I			N	N
	03743	CSREES	Breeding and Genetic Engineering for Forage Yield, Quality and Persistence	5	S			N	N
	03744	CSREES	Pesticide Impact Assessment Program for Florida- FY 1999	17	I				
	03746	CSREES	Modulation of Ethylene Sensitivity in Tomato LAL	4	I			N	N
	03748	RRF	Herbicide Persistence in Southern Soils: Bioavailable Concentration and Effect on Sensitive Rotational Crops	18	I				
	03753	RRF	A National Agricultural Program to Approve Animal Drugs for Minor Species and Uses	9	I				N
	03754	Hatch	Coconut Lethal Yellowing and Related diseases	17	I			N	N
	03755	CSREES	High Yield Production of Specialty Proteins in Tobacco HOS	4	I				N
	03758	CSREES	Classical Biological Control of Tephritd Fruit Flies with Parasitoids from East Africa	17					

	03760	RRF	Seed Biology, Technology and Ecology PLP	5	I	Univ. of CA	USDA, CA	N	N
	03763	CSREES	Advanced Ethanologenic Biocatalysts for Lignocellulose Fermentations	2	I				
	03765	CSREES	Integrated Management of Soil-borne Pests and Soil Fertility for a Sustainable Vegetable Production System	17	I			Y	N
	03767	CSREES	Study of Molecular Controls in the Regulation of Cell Wall Invertase Genes in Maize HOM	4	I				
	03778	CSREES	Utilization of Municipal Waste Products as Agricultural Soil Amendments	1	S				N
	03780	CSREES	IPM of Tomato Yellow Leaf Curl Germinvirus	17	I				
	03786	CSREES	FY-1999 Southern Region Pesticide Impact Assessment Program	17	I				
	FL109	Smith-Lever $17,082	Food Safety and Quality in Florida	19	S/I	Univ. of WI, Univ. of GA	WI, GA	Y	
	FL110	Smith-Lever $20,581	Food Processing and Handling in Florida: Quality, Value-Added Concepts and Safety	19	L	FAMU			
	FL312	Smith-Lever $2,558	Seafood and Aquaculture Product Quality and Safety in Florida	19	I				
	03286	Hatch $17,946	Biochemistry and Physiology Affecting Quality of Citrus Fruits During Storage	19	I				Y
	03378	Hatch $19,957	Clostridium Perfringens and Human Disease	19	I			N	Y
	03393	CSREES $8,800	Aquatic Food Safety and Quality FOS	19	S		Regional	N	
	03455	CSREES $41,420	Clostridium Perfingens Infection and the Immune Response	19	I		Regional	N	Y

	03456	RRF $13,688	Improvement of Thermal Processes for Foods AGE,FOS	19	I		Regional	N	Y
	03491	RRF $9,328	Parameter Sensing and Control Systems for Drying Agricultural Commodities	19	I		Regional	Y	N
	03522	CSREES $27,190	Pesticide Impact Assessment Program	19	I		Regional		
	03526	CSREES $25,810	FY1996-Southern Region Pesticide Impact Assessment Program	19	I		Regional		
	03559	Hatch	Senescence Physiology and Deterioration in Harvested Tomato and Other Fruits	19	I				
	03568	CSREES $61,985	Defining the Infective Dose and Critical Control Points in V. Vulnificus Disease	19	I		Regional		
	03588	Hatch $10	Sanitation in Post Harvest Handling Practices for Fresh Fruits and Vegetables	19	I			N	Y
	03657	CSREES	Non-Chemical Treatments to Reduce Postharvest Losses of Fruits and Vegetables	19	I			N	N
	03719	CSREES	Defining Genomic Sequences Specific to Virulent Vibrio Vulnificus Strains to Assess Riskus Strains	19	I				
	03757	CSREES	Mechanical and Antimicrobial Treatments to Remove Pathogens from Produce	19	I			Y	N
	FL262	Smith-Lever $186,167	Nutrition, Diet and Health in Florida- 1890	20	I	UF, Fort Valley State College, Univ. of Ghana	Guam, PR		
6	FL511	Smith-Lever $48,907	Nutrition and Diet in Florida	20	L	FAMU, FSU, FL Internat'l Univ.			
	FL514	Smith-Lever $203,546	EFNEP in Florida	20	I				
	FL516	Smith-Lever $16,834	Decisions for Health in Florida	20	I				Y

	FL518	Smith-Lever $84,404	Family Nutrition Program	20	I				
	03186	Hatch $2,269	Preterm Piglet Model to Evaluate Nutritional Support Regimens for Preterm Neonates	20	L	TX A&M		N	N
	03255	Hatch $7,862	Estimating Florida Per Capita Fish and Shellfish Consumption	20	I			Y	N
	03322	Hatch $22,009	Fatty Acids in Foods FOS	20	I				
	03513	Hatch $9,882	Controlled Dietary Folate Effect on Folate Status in Elderly Women	20	I				
	03515	Hatch $4,209	Folate Requirements of Pregnant Human Subjects	20	I			N	Y
	03549	CSREES $44,691	Folate and Vitamin B6 Dependence of One-Carbon Metabolism	20	I		Regional	N	Y
	03584	RRF $0	Private Strategies, Public Policies, and Food System Performance	20	I			N	Y
	03660	RRF	Food Demand, Nutrition and Consumer Behavior	20	I			N	N
	FL106	Smith-Lever $12,486	Managing Animal Manures and Wastes to Facilitate a Sustainable Florida	26	I	Univ. of GA	GA		
	FL113	Smith-Lever $18,795	Sustainable Community Development and Enhancement of Natural Systems in Florida	29	I	MS State Univ.	MS	N	
6	FL114	Smith-Lever $300,743	Environmental Landscape Management in Florida	29	L	FL Internat'l Univ., Univ. of Miami, Univ. of W. FL, Auburn Univ. Marine Ext and Res Center, Embry Riddle Univ., FSU, Univ. of GA, FAMU		Y	
	FL269	Smith-Lever $338 (1862) $136,167 (1890)	Water Quality and Environmental Programs in North Florida	29	L	UF			

	FL316	Smith-Lever $8,240	Florida's Coastal Environment and Water Quality	28	L				
	FL317	Smith-Lever $9,953	Florida's Sustainable Marine Fisheries		L				
	FL411	Smith-Lever $10,845	Florida Water Conservation	27	I/L	Cornell Univ., NC State Univ., USDA TN, VA Tech, Auburn Univ. , Univ. of PR Univ. of US Virgin, FL A&M Univ., Agricultural Technology Utilization and Transfer Project	MN, WI, CA, OR, WA, SD, WV, NY, TX, LA, SC, NC, TN, AL, PR, US Virgin Islands, Egypt	Y	
	FL412	Smith-Lever $17,245	Florida's Comprehensive Water Quality Program	27	L	OK State Univ., Auburn Univ., Univ. of AK, Clemson, Univ. of GA, Univ. of KY, LA State Univ., MS State Univ., NC State Univ., TX A&M Univ., Univ. of TN, VA Polytechnical Institute, Univ. of PR, Univ. of WI, Cornell Univ., OR State Univ., Univ. of MT, Univ. of RI, ND State Univ., Univ. of DE	OK, AL, AR, SC, GA, KY, LA, MS, NC, TX, TN, VA, PR, WI, NY, OR, MT, RI, ND, DE		
	FL413	Smith-Lever $14,742	Florida Aquaculture and Pond Management	30	L				
	FL415	Smith-Lever $13,614	Florida's Forest Resources	29	L				
	FL416	Smith-Lever $2,956	Management and Ecology of Aquatic, Wetland, and Invasive Exotic Plants in Florida	28	L				
	FL417	Smith-Lever $15,173	Ecosystem Conservation in Florida: Protecting and Sustaining Wildlife Species in Natural and Altered Systems	29	L			Y	

	FL418	Smith-Lever $2,835	Animal Damage Control and Management of Nuisance Wildlife Situations in Florida	29	L			N	
	FL419	Smith-Lever	Management and Ecology of Mosquitoes and Other Biting Arthropods in Florida	25	L				
	03204	Hatch $19,619	Population Dynamics and Local Extinction of Naturally Isolated Wildlife Populations in Managed Landscapes	28	L				
	03260	Hatch $46,265	Calibrated Soil Test Methodology for Management of Agronomic and Vegetable Crop Nutrients	24	I				Y
	03274	Hatch $8,460	Environmental Pedology and Landuse	29	I			Y	Y
	03285	Hatch $20,457	Anaerobid Decomposition of Energy Crops, Wastes, and Metals	29	I				
	03338	RRF $13,747	Chemistry and Bioavailability of Waste Constituents in Soils	25	I		Regional	N	Y
	03372	RRF $18,993	Microirrigation for Optimum Crop Productivity and Minimum Groundwater Contamination	27	I		Regional		
	03423	Hatch $36,583	Foraging Behavior and Control of Subterranean Termites FTL	25	I		Guam, LA		Y
	03429	CSREES $41,054	Soil Processes Regulating the Fate of Chlorophenols in Wetlands	24	I		Regional		Y
	03434	CSREES $34,254	Epidemiological Factors Influencing Biocontrol Efficacy in Underwater Pathosystems	27	I		Regional	N	Y
	03459	RRF $3,331	Environmental Transformation, Exposure, and Effects of Pesticide Residues	24	I		Regional		Y

	03460	RRF $16,290	Pesticides and other Toxic Organics in Soil and Their Potential for Ground and Surface Water Contamination	29	I		Regional		
	03492	RRF $77,367	Microirrigation of Horticultural Crops in Humid Regions AGE,BRA,FTP,HOS,LAL	27	I		Regional	Y	Y
	03539	Hatch $11,781	Edaphic Factors Related to Growth of Torpedograss, Maidencane, and Hygrophila	28	I			N	Y
	03548	RRF $4,529	Solid-Phase Extraction Techniques for Pesticides in Water Samples	27	I		Regional	N	Y
	03593	RRF $1,685	Development and Application of Comprehensive Agricultural Ecosystems Models	28	I		Regional	Y	Y
	03594	Hatch $0	Formation, Sprouting and Longevity of Hydrilla Tubers	28	I			Y	N
	03596	RRF $3,382	Animal Manure and Waste Utilization, Treatment, and Nuisance Avoidance for a Sustainable Agriculture	30	I		Regional	Y	Y
	03622	Hatch	Integrated Water and Nutrient Management on High Water Table Sandy Soils	27	I				
	03688	RRF	Mineralogical Controls on Colloid Dispersion and Solid-phase Speciation of Soil Contaminants	24	I			N	Y
	03689	CSREES	Agro-Ecosystem Indicators of Sustainability as Affected by Cattle Density in Ranch Management Systems	30	I			N	N
	03689	CSREES	Agro-Ecosystem Indicators of Sustainability as Affected by Cattle density in Ranch Management systems	30	I			N	N

	03723	Hatch	Conservation and Laboratory Rearing of Butterflies	28	I			N	N
	03759	RRF	Freeze Damage and Protection of Horticultural Species	28	I			Y	N
	03773	CSREES	Utilization of Sewage Sludge Compost as Soil Amendment in the Tropics	24	S				N
	FL124	Smith-Lever $5,483	Florida's Farm and Home Safety	33	I/L	Auburn Univ., MS State Univ., UF, Univ. of South FL, Miami Univ. and FL A&M Univ. Ext Disaster Emergency Network (EDEN), Univ. of KY, Univ. of IL, PA State Univ., Univ. of MN, Univ. of CA-Davis, Univ. of WI, Manitoba Labour, Farm and Ranch Safety and Health Association in British Columbia, Queens Queens Univ. in Ontario, CO State Univ., IA State Univ., OH State Univ.	AL, MS, KY, WI, IA, GA, WA, IL, OH, CO, All states and Canada	Y	
	FL211	Smith-Lever $16,715.80	Animal Sciences Education-1890	34	I/L				
	FL212	Smith-Lever $16,715.80	Plant Sciences- 1890	34	I/L				
	FL213	Smith-Lever $16,715.80	Science and Technology- 1890	34	I/L				
	FL214	Smith-Lever $16,715.80	Environmental Education-1890	34	I/L				
	FL215	Smith-Lever $16,715.80	Individual and Family Resources 1890	34	I/L				
	FL216	Smith-Lever $16,715.80	Citizen/Leadership- 1890	34	I/L				
	FL217	Smith-Lever $16,715.80	Communication Arts and Sciences- 1890	34	I/L				

	FL218	Smith-Lever $16,715.80	Organizational Development 1890	34	I/L				
	FL219	Smith-Lever $16,715.80	Volunteer Development- 1890	34	I/L				
	FL270	Smith-Lever $977 (1862) $86,167 (1890)	Community Resource Development	32	I/L	UF, FAMU, SC State, Fort Valley Univ., Univ. of AL, Carolina State Univ., George Institute of Tech, MS State-Valley State Univ., Clark Univ., Univ. of TN, Tuskegee Univ., Hampton Institute, Univ. of AK, Southern Univ., Langston Univ., NC State Univ., VA State Univ.	SC, AL, MS, TN, AK, NC, VA, MA, OK		
	FL510	Smith-Lever $21,082	Housing and Built Environment in Florida	32	I	Univ. of IL, UT State Univ., Clemson Univ., NC State Univ.	IL, UT, S C, NC	N	
3	FL512	Smith-Lever $43,421	Family Economic Stability in Florida	33	I/L				
	FL513	Smith-Lever $41,626	Building Community Leadership for Economic Development and Public Issues Education	32	I/L	LA State Univ., FAMU, FL Internat'l Univ., Univ. of N. FL, N. FL Comm. Col. Gulf Coast Comm. Col., Tallahassee Comm. Col., Oklaloosa Walton Comm. Col., Escambia Santa Rosa Comm. Col., Santa Fe Comm. Col., Pasco Hernando Comm. Col.,	LA	Y	
	FL515	Smith-Lever $79,344	Successful Parenting/Family Development in Florida	33	I		AL, GA, MS, AK, TX, TN, OK, VA, LA, SC, KS	Y	

5	FL517	Smith-Lever $186,666	Florida Association for Family and Community Education Maintenance	33	I/L					
	FL701	Smith-Lever $38,158	Preparing Florida's Youth for the World of Work	34	I/L					
5	FL703	Smith-Lever $61,034	4-H EFNEP in Florida	34	I	Univ. of KY, TX A&M Univ.	KY, TX			
6	FL711	Smith-Lever $86,521	Animal Sciences Education	34	I/L					
	FL712	Smith-Lever $22,982	Plant Sciences	34	I/L					
	FL713	Smith-Lever $19,954	Science and Technology	34	I/L	Univ. of AK, MI State Univ. Univ. of CT, Auburn Univ., IA State Univ., Univ. of WA, Cornell Univ., Univ. of WI, Univ. of ID, Univ. of MO, Purdue Univ., Univ. of KY	AK, MI, CT, AL, IA, WA, NY, WI, ID, MO, KY			
5	FL714	Smith-Lever $48,092	Environmental Education	34	I	Univ. of WI, AK Extension, OH Extension	WI, IL, ID, AK, OH, WA			
	FL715	Smith-Lever $29,110	Individual Family Resources Including Health and Safety	34	I					
7	FL716	Smith-Lever $61,688	Citizenship/Leadership	34	I	Univ. of WI, MI State Univ.	WI, MI			
	FL717	Smith-Lever $77,625	Communication, Arts and Sciences	34	I					
9	FL718	Smith-Lever $226,250	Organizational Development	34	I					
	03299	Hatch $0	The Invasion of North America by Aedes albopictus: Ecological Impact and Gonotrophic Patterns	33	I					Y
	03369	RRF $11,704	Identification, Behavioral Ecology, Genetics and Management of African Honey Bees	33	I		TX, Regional	N	N	
	03418	Hatch $0	Florida Agricultural Labor Markets	32	I			N	Y	

	03488	Hatch $0	Changes in Fisheries Regulations and Commercial Fishing Families	33	I		NC	Y	Y
	03571	Hatch $0	Dynamic Economic Analysis of the Florida Citrus Industry	32	I		Brazil, Mexico, Cuba	Y	Y
	03583	RRF $0	Impact Analysis and Decision Strategies for Agricultural Research	32	I			N	Y
	03595	Hatch	Asexual Propagation of Environmental Plants	33	L			N	Y
	03599	Hatch $0	The Effect of Farmland Boom/Bust Cycles on the Rural Economy	33	I			Y	Y
	03669	Hatch	Effects of Horticulture, Gardening Experiences, and Green Spaces on Human Populations	33	I				
	03717	CSREES	Risk Management Research/Education for the Florida Citrus Industry	32	I				N
1	FL719	Smith-Lever $160,077	Volunteer Development	34	L	Auburn Univ., AL A&M Univ., NC State Univ., V PI, VA State Univ., Clemson Univ., SC State Univ., Univ. of GA, Univ. of AR, Univ. of TN, TX A&M Univ., OK State Univ., Univ. of KY, KY State Univ. , LA State Univ., TN State Univ., MS State Univ., Southern Univ., Langston Univ., Prairie View A&M Univ., Ft Valley State Univ.	AL, NC, VA, SC, GA, AR, TN, TX, OK, KY, LA, MS		

NOTE: Research projects without monetary value are new projects that will be in effect for first report of accomplishment in 2000 but will not be reported in POW.

Total Formula Funds Expended by Goal

	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Total
62 tension	$305,694	$40,221	$353,691	$427,965	$1,210,089	$2,337,660
62 search	$3,756,486	$226,134	$90,922	$357,797	$357,797	$4,443,043
90 tension	$558,501	$0	$186,167	$136,167	$236,616	$1,117,451
890 search	N/A	N/A	N/A	N/A	N/A	N/A

* 1890 Research will be reporting separately

Multi-state Funds Expended by Goal

	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Total

62 tension	$203,868	$17,082	0	$60,114	$499,357	$780,421
62 search	$369,833	$18,822	$46,960	$251,215	$11,704	$698,534
90 tension	$186,167	0	$186,167	0	$86,167	$458,501
890 search						

*1890 Research will report separately

Integrated 1862 Extension/Research Formula Funding

	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Total
62 ension/ search	$938,180	$26,410	$7,862	$410,041	$126,453	$1,508,946

890 ension						
890 search						

*1890 Research and Extension integration will report separately

1862 Extension Matching Funds/Smith-Lever

	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Other Goals	Total
deral ith-Lever	$305,694	$40,221	$353,691	$427,965	$1,210,089	$1,369,906	$3,719,538

te	$10,038,442	$789,239	$1,213,974	$3,234,609	$3,200,749	$5,508,197	$23,985,210
unty	$1,179,867	$228,168	$2,172,609	$2,411,737	$7,507,146	$8,507,859	$22,007,386

1862 Research State-Matching Funds

	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Total
ıte	$17,804,280	$918,512	$318,292	$3,523,295	$538,164	$23,102,543

MDCCCXC. Florida State Matching funds have not existed in the past. However, the Florida Legislature voted to give the 1890 Florida programs 30% beginning this fiscal year; 45 % in 2000 and 50 % matching funds in the year 2001. The percentage for 1999-2000 will be recorded in the first AREERA Report of Accomplishment in December of 2000.

FTEs and SYs

	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5
2 Extension (FTEs)	69.95	8.97	15.66	99.98	250.62
2 Research (SYs)	322.3	15.0	6.0	54.3	211.2

*FAMU has reported their own Sys and FTEs

Appendix A: Website Addresses

129

Website Addresses:

1. **Florida First** http://www.ifas.ufl.edu/
2. **Florida Citizens 1999 viewpoint survey**
   http://www.ifas.ufl.edu/peodweb/extadm.htm
3. **Location where we will place Florida Land grant Universities AREERA Report** http://www.ifas.ufl.edu/peodweb/

Appendix B: Stakeholders and Guidelines

131

Florida's Plan for Stakeholder Input Requirements for Recipients of Agricultural Research, Education, and Extension Formula Funds

Stakeholders
Guidelines
For
The University of Florida and Florida A&M University

Actions taken to encourage stakeholder input: The University of Florida and Florida A&M University have established a process for "receiving input from persons who conduct or use agriculture research, extension, or education." These stakeholder processes include, but are not limited to, the following:

I. **Florida FIRST (Focusing IFAS Resources on Solutions for Tomorrow) Conference**
II. **Florida Citizens' Viewpoint 1999 Survey**
III. **Florida County Extension Advisory Committees**
Iς. **Florida Ag Council, Inc.**
ς. **Departmental Advisory Committee and the Research and Education Center Advisory Committee**
ςI. **Commodity Advisory Committees**

Brief description and process used to identify individuals and collect input:

Florida FIRST: is a strategic, long range planning process for UF/IFAS to evaluate,

132

review and determine future direction to better carry out its mission. This process is accomplished through the invitation and input of over 263 Florida individuals, organizations and agencies. Scientists and experts at UF/IFAS have researched trends and major determinants of change in Florida's agricultural, human and natural resource subsectors. These findings have been compiled into what are termed Base Papers for each subsector. Three weeks before the Florida FIRST Conference (held May 20-21, 1999 in Safety Harbor) participants receive a copy of the Base Paper related to their subsector or area of expertise. (see Appendix G– for list of names of attendees and subsectors). They also received an executive summary of all Base Papers. Participants were asked to review the papers prior to the

conference and to offer feedback as well as additional needs and concerns. Following the conference the information gained will:

I. **be used as a resource for determining UF/IFAS research and extension imperatives for the future including immediate, short-term, and long term critical need areas,**
II. **will be used to complete an overall strategic plan, and**
III. **help identify the future direction of UF/IFAS programs**

Florida Citizen's Viewpoint 1999 Survey: was a random survey of all Florida Citizens and not targeted to Extension Clientele. This Survey was developed for use as a state level telephone survey to assess citizens' perceptions of the importance of selected issues and educational needs as related to their community. The information that was gathered was generalized to the state population and to a more limited extent to the Extension districts. The issues and educational needs covered a fairly broad spectrum; however, a conscious attempt was made to keep the lists as brief and focused as possible. The total sample size was 466, and the precision level is plus or minus 5%. (Appendix F --Preliminary Results of the Florida Citizens' Viewpoint 1999 Survey)

I. **The Florida County Extension Advisory Committees: provides direction for Extension education programs for both the University of Florida and Florida A &M University. Active advisory committees exist in all of Florida's 67 counties, usually at both the overall and program area levels. The committees serve as a vehicle for local citizens to participate in, influence and provide support to the planning, implementation and evaluation of Extension education programs, and the accountability for those programs. The composition of the committees consists primarily of positional and reputational leaders representing the areas of agriculture, agribusiness, natural resources, family and consumer sciences, 4-H youth, and community development. Special attention is given to the representatives of the target populations, including race and socio-economic**

133

level. Extension advisory committees are strongly believed to result in increased accuracy in identification of clientele-perceived needs, more effective decisions on program priorities and methods, and more rapid and accurate communication of program efforts and clientele feedback on both program impact and need for education and research. This committee format serves as a vehicle for local residents to participate in, influence and provide support to the planning and implementation of the Extension Education Programs.

II. **Departmental Advisory Committee and the Research and Education Center Advisory Committee: are developed in the same manner and have the same function as the county Extension Advisory committees.**

I. **Florida Ag Council, Inc. – is a self-nominating body comprised of over 100 organizations. A 12-member board directs it. Its purpose is to increase the accuracy in the identification of clientele-perceived needs and to assist in the decision making process relating to research, teaching and Extension priorities.**

Commodity Advisory Committees: are varies advisory groups with special emphasis on important program areas such as Florida A&M Universities program FL 261 Small Animal and Small-scale Farm Profitability and Sustainability in Florida-1890. Of primary importance in identifying critical need areas is their Goat Program Advisory Council. Although commodity oriented, this type of advisory committee is still developed and functions using the same standards as the county advisory committees.

Stakeholder information obtained by each land grant university is shared between Florida land grant universities on request.

Appendix C: Scientific Peer and Merit Review Guidelines

135

Merit Review and Scientific Peer Review for Extension and Research Project Proposals

Performance Standards

And
Operational Guidelines
For
The University Of Florida and Florida A&M University

Intention: This document sets out performance standards and operational guidelines for the Florida Land Grant Universities. The intention of the document is to facilitate both Universities and all integrated, multi-institutional, and multi-state activities in complying with the provisions of the federal Agricultural Research, Extension, and Education Reform Act of 1998. Adoption of these standards and guidelines will be primarily accomplished by adoption-by-reference in the Florida Plan of Work.

Definitions: Scientific Peer Review of an individual research is defined as the evaluation of the conceptual and technical soundness of the intended activity by individuals qualified by their status in the same discipline, or closely related field to judge the worthiness of the proposal. Peer reviewers will be asked to access Extension programs through a Merit Review process whereby the quality and relevance to program goals can be analyzed for its likeliness to achieve the intended objectives and the anticipated outcomes.

Scope: The topics covered by this document pertain to research and extension

136

proposals, projects and programs that are to be sanctioned and funded as part of the federal-state partnership in agriculture research and extension. These standards and guidelines do not apply to proposed research and extension that are subject to peer review by competitive grant agencies, peer review of extension and research publications. Thus, all research and extension projects sponsored by Florida Land Grant Colleges will have been formally merit and peer reviewed, before the expenditure of any federal funds.

Process: Prior to the initiation of any research or extension project or program that will be wholly, or in part, funded by federal formula funding, the designated review coordinator (or, in the case of some multi-institutional, regional or multi-state

projects, the administrative advisor) will call for a peer review of the proposed research or extension project. A minimum of three peer scientists (i.e., individuals qualified by their status in the same discipline, or a closely related field of science) will be selected to read and provide written comments on the proposed project.

Terms of Reference: The terms of reference for the reviewers will focus their attention on questions of the quality of the proposed science, technical feasibility of the research or extension program, the validity of the approach, and the likelihood for completing the stated objectives. Other equally important comments will include relevance to the state's priorities, the degree of integration between extension and research (as appropriate), responsiveness to stakeholders identified critical need areas, and the accuracy of any claims for multi-disciplinary, multi-institutional and multi-state collaboration.

Responsibility: All Peer and Merit review activities for proposed extension programs will be the responsibility of the individual extension program leaders. All Peer and Merit review activities for proposed research are the responsibility of the Program Dean for Research. The above designated coordinators or an administrative advisor and/or committee will be responsible for a proposed multi-state project. However, this responsibility for either research or extension may be delegated to others if deemed suitable.

Appointment of Reviewers: Peer and Merit reviewers may be selected from the same campus or from another institution or organization at the discretion of the program leader, chairman or by the delegated authority. Consideration will be given to the expenses associated with the reviewing individual proposals in the selection of peer reviewers. Additional consideration will be given to appointing reviewers who are without any apparent conflicts of interest and who are without personal or professional bias. Consideration may also be given in selecting reviewers that can protect confidential business information. The anonymity of the reviewers will not be preserved except in very special circumstances.

137

Documentation: Reviewers will be asked to present their finding in writing, and records of the reviewers' comments will be preserved for the life of the project, or for a period of three years in the event that a project is not initiated. Document storage will, for the most part, be electronic.

Research and Extension Projects, Events and Activities not Covered: Projects funded by competitively awarded grants, federal contract research projects, and federal cooperative agreements are not subject to these provisions, as they would be peer reviewed under other authorities.

Performance Standards: Peer or Merit review of proposed projects, events and activities is expected to provide the following performance outcomes:

RESEARCH

I. **increase the quality of science funded by the federal-state partnership**

II. **better assure relevance to institutional priorities and mission**

III. **provide more responsiveness to stakeholder needs including the underserved and under-represented populations, and**

Iç. **identify more opportunities to partner with other states, regions, federal research agencies, and Extension counterparts.**

EXTENSION

I. **Provide more responsiveness to stakeholder (including the underserved and under-represented) identified critical need issues**

II. **Better assure relevance to institutional priorities and mission**

III. **Increase the quality of programs, events and activities funded by the federal-state partnership, and**

Iç. **Identify more opportunities to partner with other institutions, regions, states, and research counterparts**

Performance outcomes from peer reviews will be monitored by the responsible extension program leader, chair or advisor through the annual process of reporting results and impacts, which is in turn part of the Plan of Work reporting requirements. Adjustments to this merit and scientific peer review process will be made as needed.

Revised June 1, 1999

Appendix D: Multi-State Levels of Collaboration

139

Plan for Multi-state collaboration involving Research and/or Extension

For
University of Florida and Florida A& M University

The general philosophy of the Florida land grant universities regarding multi-state collaboration is to stimulate and facilitate cooperation within the Southern Region as well as with states outside this region who may have similar issues and objectives that could benefit from joint research and/or extension involvement.

University of Florida Extension (ask lawrence about this)

Extension at the University of Florida has four main methods of developing multi-state endeavors.

1, Individual Faculty—In this method an individual faculty member informally contacts faculty in other states for collaboration on identified critical need issues. Collaboration may include:

I. **the sharing of materials,**
II. **time and human resources,**
III. **and/or the development of jointly used materials.**

140

B. Program leaders meet regionally to plan and design programs as well as make staffing decisions. This group meets in Tifton Georgia and includes the states of Florida, Georgia, South Carolina, Alabama, and Tennessee. This semi-formal organization has lead to the formation of a formal multistate staffing and curriculum effort which has included most recently the development of:

I. **Regional forestry**
II. **Regional EPA**
III. **The Rural Development Center**
Iς. **The 4-H Curriculum Consortium**

V. The SERA-IEGS

4. Southern Regional Extension Directors

141

APPENDIX E: LAND GRANT UNIVERSITIES DIRECTOR LETTER OF CERTIFICATION

142

This is to certify that the following copy of the 2000-2004 AREERA Plan of Work is true and correct to the best of my knowledge.

Dr. Bobby R. Phills, Florida A & M University, Dean and Director for Land Grant Programs

Dr. Christine T. Waddill, University of Florida, Dean and Director for Extension

Dr. Richard L. Jones, University of Florida, Dean and Director for Research

AREERA Report Administrator- Cheri Anne Brodeur
AREERA Report Coordinator – Tyann Nelson
University of Florida
352-392-0386

UNIVERSITY OF FLORIDA

Florida Cooperative Extension Service

Florida Citizens' Viewpoint 1999 Survey: Preliminary Results

Self-Identified Educational Needs of Florida Citizens[1]

Steve Jacob, W.R. Summerhill, and Larry R. Arrington[2]

Overview of the Study

The Florida Citizens Viewpoint 1999 questionnaire was developed for use as a state level telephone survey to assess citizens' perceptions of the importance of selected issues and educational needs as related to their community. The information gathered is generalizable to the state population and to a more limited extent to the Extension districts. The total sample size was 466, and the precision level is ± 5%. We hope that State and County Extension Faculty will find this information useful in developing State and County Major Programs. The issues and educational needs listed in the questionnaire covered a fairly broad spectrum, but were certainly not all encompassing. A conscious attempt was made to keep the lists as brief and focused as possible by limiting the items to areas that Extension could reasonably be expected to address.

Top Ten Overall Priorities

Table 1 lists the top overall educational needs of respondents to the 1999 Florida Citizens' Viewpoint Survey. For this ranking, the percentage of respondents reporting that the topic would be a high priority for educational programming was

144

[1]This document was produced in conjunction with the Program Development and Evaluation Center, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: April 1999.

[2]Steve Jacob, Assistant Professor, W. R. Summerhill, Professor Emeritus, and Larry R. Arrington, Associate Dean for Extension, Department of Agricultural Education and Communication; Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL 32611.

used. Respondents were asked: Listed below are some potential educational needs that may exist in communities. We would like to have your opinion as to the priority that each should be given in your community. Do you think it is a (1) low priority, (2) moderate priority, or (3) high priority educational need for your community? (Please circle one response for each item).

TABLE 1. Top Ten High Priority Educational Needs of Florida Citizens.

145

Educational Area	High Priority

146

1) Teen Drug and Alcohol Prevention	**75.9%**

147

2) Prevention of Water Pollution	**72.4%**

148

3) Teen Pregnancy Prevention	**69.0%**

149

4) Training for Nursing Home Workers	**69.0%**

150

5) Training for Child Care Providers	**67.0%**

151

6) Crime Prevention and Safety	**66.2%**

152

7) Life Skills for Youth	**65.7%**

153

8) Natural Disaster Preparedness	**65.6%**

154

9) Protecting the Marine Environment	**63.7%**

155

10) Career Exploration for Youth	**62.0%**

The top ten items can be seen as fitting into three broad categories: 1) Youth (numbers 1, 3, 5, 7, and 10), Elders (number 4), and the Environment (numbers 2, 6, 8, and 9). Many other questions were asked. The complete questionnaire and results can be found in the Appendix at the end of this document.

Presentation of all Educational Need Questions

156

The educational needs of respondents were assessed through a series of items, arranged in logical groupings. These groups include: 1) Youth and Teens; 2) Health, Nutrition, and Food Safety; 3) Family and Home; 4) Environment; and 5) Community and Economic Development.

Table 2. presents the questions regarding the educational needs of youth and teens. These items received a great deal of support from the respondents. All items were identified by a majority of respondents as high priority educational needs.

Table 2. Educational needs relating to youth and teens in your community.

Educational Area	High Priority
1) Teen Drug and Alcohol Abuse Prevention	75.9%
2) Teen Pregnancy Prevention	69.0%
3) Life Skills for Youth	65.7%
4) Career Exploration for Youth	62.0%
5) Teen Smoking Prevention	61.3%

Table 3. presents information on health, nutrition, and food safety. The percentage of high priority responses to these items were lower than those for youth and teen educational needs. A majority of respondents identified restaurant and commercial safe food handling and healthy lifestyles as high priority educational needs in their communities.

Table 3. Educational needs in health, nutrition, and food safety.

Educational Area	High Priority
1) Restaurant and Commercial Safe Food Handling	59.1%
2) Healthy Lifestyles (exercise, smoking cessation, drug and alcohol abuse etc.)	54.7%

157

3) Coping with Chronic Diseases (for example diabetes, high blood pressure, etc.)	46.6%
4) Safe Food Handling in the Home	44.4%
5) Nutrition Education	43.8%
6) Topics Relating to Aging (housing, care, health, etc.)	43.4%

Table 4 presents items related to family and home. Once again, the issues of elders and youth emerged as the most endorsed high priority educational needs. Training for nursing home workers and child care providers, and parenting topped the list.

158

Table 4. Educational needs related to family and home.

Educational Area	High Priority

159

1) Training for Nursing Home Workers	**69.0%**

160

2) Training for Child Care Providers	**67.0%**

161

3) Parenting Programs (infant care, child development, etc.)	**61.6%**

162

4) Health Insurance Options (Medicare, long-term care, etc.)	**57.4%**

163

5) Family Financial Management	**47.1%**

164

6) Proper Home Use of Pesticides and Fertilizers	**43.0%**

165

7) Home Upkeep and Repair	**32.5%**

166

8) Home Landscape Design and Maintenance	**19.1%**

167

9) Effective Gardening Methods	**16.2%**

Table 5 presents the environmental items, which were highly supported. The first five items, were identified by a majority of all respondents as high priority educational needs.

Table 5. Environmental Educational needs in your community.

168

Educational Area	High Priority

169

1) Prevention of Water Pollution	**72.4%**

170

2) Protecting the Marine Environment	**63.7%**

171

3) Energy Conservation	**62.1%**

172

4) Water Recreation and Safety	**53.5%**

173

5) Conservation of Wildlife Habitat and Endangered Species	**50.0%**

174

6) Stewardship of Woodlands	**46.7%**

175

7) Solid Waste Reduction	**46.6%**

176

8) Control of Destructive and Invasive Plants	**40.7%**

Table 6. presents the items related to economic and community development. These items can be seen as having two main themes. The first theme, community safety (crime prevention and safety and natural disaster preparedness), was identified by nearly two thirds of all respondents as a high priority educational need. The remaining items, related to community and economic development were not as highly supported by respondents.

Table 6. Economic and community development needs.

Educational Area	High Priority

178

1) Crime Prevention and Safety	**66.2%**

179

2) Natural Disaster Preparedness	**65.6%**

180

3) Community Economic Development	**38.8%**

181

4) Improved Business Management Skills	**35.4%**

182

5) Community Leadership Skills Development	**35.0%**

183

6) Volunteer Skills Development	**33.3%**

184

7) Improved Farming Practices	**29.2%**

Additional Information

A more detailed analysis and discussion of this survey data is being prepared and will be provided as soon as possible. Please see the attached Appendix for all of the survey items and the response distributions as they occurred in the survey instrument. For additional copies of the survey instrument please visit http://www.ifas.ufl.edu/peodweb/viewpoint.htm on the World Wide Web.

Thanks

185

Sincere appreciation is expressed to the following County Extension Directors and their staffs for their help in developing and critiquing the questionnaire: Carolyn Best, David Holmes, Muriel Turner, Dee Wilkins, Denise Blanton, Lawrence Heitmeyer, Austin Tilton, Mary Williams, Gerald Edmondson, and Deborah Boulware. We would also like to thank the members or the Long Range Planning Steering Committee for their input: Jim App, Lawrence Carter, Marilyn Norman, Randy Brown, Ed Hanlon, Joe Schaefer, and Mary Duryea.

Appendix: Complete Survey Results
1999 Florida Citizens' Viewpoint Survey

186

Listed below are some potential educational needs that may exist in communities. We would like to have your opinion as to the priority that each should be given in your community. Do you think it is a (1) low priority, (2) moderate priority, or (3) high priority educational need for your community? (Please circle one response for each item.)

First, we would like to ask you about some potential educational needs relating to youth and teens in your community.

	Low Priority	Moderate Priority	High Priority
Teen Smoking Prevention	13.7	24.9	61.3
Teen Drug and Alcohol Abuse Prevention	7.8	16.3	75.9
Teen Pregnancy Prevention	10.4	20.6	69.0
Life Skills for Youth	9.0	25.2	65.7
Career Exploration for Youth	10.6	27.3	62.0

Now we would like to ask about some potential educational needs in health, nutrition, and food safety.

	Low Priority	Moderate Priority	High Priority
Coping with Chronic Diseases (for example diabetes, high blood pressure, etc.)	14.4	39.0	46.6
Healthy Lifestyles (exercise, smoking cessation, drug and alcohol abuse etc.)	11.2	34.1	54.7
Topics Relating to Aging (housing, care, health, etc.)	14.5	42.1	43.4
Nutrition Education	15.7	40.4	43.8

187

Safe Food Handling in the Home	18.3	37.3	44.4
Restaurant and Commercial Safe Food Handling	13.2	27.7	59.1

Next, we would like to ask you about some potential educational needs related to family and home.

	Low Priority	Moderate Priority	High Priority

188

Parenting Programs (infant care, child development, etc.)	**9.5**	**28.8**	**61.6**

189

Training for Child Care Providers	**8.6**	**24.5**	**67.0**

190

Training for Nursing Home Workers	**9.8**	**21.2**	**69.0**

191

Family Financial Management	**10.9**	**42.1**	**47.1**

192

Health Insurance Options (Medicare, long-term care, etc.)	**9.5**	**33.0**	**57.4**

193

Home Upkeep and Repair	**19.1**	**48.5**	**32.5**

194

Home Landscape Design and Maintenance	**33.3**	**47.7**	**19.1**

195

Proper Home Use of Pesticides and Fertilizers	**18.5**	**38.5**	**43.0**

196

Effective Gardening Methods	**37.8**	**46.0**	**16.2**

We would like to ask you about some potential natural resource educational needs in your community.

197

	Low Priority	Moderate Priority	High Priority

198

Conservation of Wildlife Habitat and Endangered Species	**17.8**	**32.3**	**49.9**

199

Solid Waste Reduction	**14.9**	**31.7**	**46.6**

200

Stewardship of Woodlands	**18.1**	**35.1**	**46.7**

201

Control of Destructive and Invasive Plants	**20.3**	**39.0**	**40.7**

202

Protecting the Marine Environment	**11.3**	**25.1**	**63.7**

Water Recreation and Safety	**12.8**	**33.7**	**53.5**

204

Prevention of Water Pollution	**7.3**	**20.3**	**72.4**

205

Energy Conservation	**7.4**	**30.5**	**62.1**

Finally, we would like your opinion about some potential economic and community development needs.

	Low Priority	Moderate Priority	High Priority

207

Natural Disaster Preparedness	**8.6**	**25.8**	**65.6**

208

Community Leadership Skills Development	**17.9**	**47.1**	**35.0**

209

Volunteer Skills Development	**19.3**	**47.4**	**33.3**

210

Crime Prevention and Safety	**6.0**	**27.9**	**66.2**

211

Community Economic Development	**12.8**	**48.4**	**38.8**

212

Improved Farming Practices	**29.7**	**41.2**	**29.2**

213

Improved Business Management Skills	**16.3**	**48.3**	**35.4**

Prior to this survey, have you heard of any of the following organizations or groups?

Organizations	Percentage having heard of the organization
University of Florida Institute of Food and Agricultural Sciences (IFAS)	**39.0**
Cooperative Extension Service	**32.0**
4-H Clubs	**80.0**

214

Master Gardeners	**25.0**
Family and Community Educator Clubs	**15.0**
Expanded foods and nutritional educational program	**19.0**

Finally, we need to ask you a few questions about you and your household.

Do you live in a city, suburb of a city, small town or rural area?

Area Type	Percentage
City	39.9
Suburb of a City	28.3
Small Town	17.8
Rural Area	14.0

In what year were you born?

Age Statistics	
Mean Age	48
Age Range	18-96
Age Standard Deviation	19

What is your gender?

	Percentage
Male	43
Female	57

In the past 12 months did you or a member of your household participate in or receive information from the Cooperative Extension Service (County Extension Agent's office)?

215

Receive Information from Extension?	Percentage
Yes	9.2
No	90.8

IF YES, did you participate or receive information in any of the following areas?

Area	Percentage

216

Agriculture or Horticulture	**4.8**

217

Wildlife, Forestry or Fisheries	**3.7**

Family and Consumer Sciences	**3.1**

219

4-H/Youth	**5.3**

220

Community or public affairs	**2.6**

221

Marine sciences	**6.6**

222

Energy conservation	**4.3**

How many years have you lived in the local area?

Years in Community Statistics	Years
Mean Years	17
Years Range	1-96
Years Standard Deviation	17

223

How many people, including yourself, live in your household?

Number of Members in the Household Statistics	Members
Mean Members	2.6
Members Range	1-10
Members Standard Deviation	1.5

What is the highest level of education that you have completed?

Degree	Percentage
Less than High School	10.2
High School	55.2
B.A. or B.S. Degree or greater	34.6

Which of the following best describes your current employment status?

Employment Status	Percentage

224

Employed for pay by a company, business, or government	**47.0**

Self-employed	**9.5**

226

Laid Off - Looking for Work	**.9**

Unemployed	**4.2**

228

Homemaker	**6.9**

Retired	**27.1**

230

Refused	**4.4**

Which of the following categories best describes your 1998 *total household income* from all sources before taxes?

Income Category	Percentage
Less than $15,000	**18.7**
$15,000-$29,999	**20.1**
$30,000-$44,999	**23.2**
$45,000 or above	**38.0**

231

	DEPARTMENT	LEADERS	I/E
ndustries			
aird	UF/IFAS Agricultural and Biological Engineering	Faculty Reporter	Internal
Byrne	UF/IFAS Food and Resource Economics	Faculty Recorder	Internal
pinera	UF/IFAS Entomology and Nematology		Internal
ooksey, III	McCall Service, Inc.		External
ane	Asgrow		External
ailey	12454 NE 14th Avenue, Anthony, FL		External
lstein	CPCO		External
is	Haile-Dean Seed Company		External
rtney	Florida Fertilizer & Agrichemical Association		External
Johnson	UF/IFAS Office of District Directors		Internal
dder	UF/IFAS Soil and Water Science	Faculty Provocateur	Internal
Littell	UF Statistics		Internal
rovich	Diamond R Fertilizer Co, Inc.	Stakeholder Provocateur	External
rsons	UF/IFAS Citrus REC- Lake Alfred		Internal
dsklev	Florida Foundation Seed Producers, Inc		External
Thompson	Farm Credit of North Florida	Stakeholder Moderator	External
e Fisheries and Coastal Resources			
Blokland	UF/IFAS Food and Resource Economics		Internal
ato	UF/IFAS Florida Sea Grant College	Faculty Reporter	Internal
hapman	UF/IFAS Fisheries and Aquatic Sciences		Internal
lark, Jr.	UF/IFAS Fisheries and Aquatic Sciences	Faculty Provocateur	Internal
L. Duda	A. Duda and Sons, Inc.		External

Kane	UF/IFAS Environmental Horticulture		Internal
zur	UF/IFAS Fisheries and Aquatic Sciences		Internal
McNeely	Bureau of Seafood and Aquaculture	Stakeholder Moderator	External
ilon	UF/IFAS Food and Resource Economics	Faculty Recorder	Internal
Nelson	Florida Marine Fisheries Commission	Stakeholder Provocateur	External
O'Meara	UF/IFAS Florida Medical Entomology Lab--Vero Beach		Internal
as	UF/IFAS Dade County - District V		Internal
inson	Pasco Mosquito Control District		External
Simard	West Florida Fish Grower Coop.		External
Stocker	UF/IFAS Center for Aquatic and Invasive Plants		Internal
anner	Aquatropicals, Inc.		External
es			
rrington	UF/IFAS Office of Dean for Extension		Internal
n Bolton	UF/IFAS Family Youth and Community Sciences	Faculty Provocateur	Internal
eming	Taylor County Development Authority		External
eRosier	Florida State Rural Development Council	Stakeholder Provocateur	External
rs	UF/IFAS Jackson County - District I		Internal
Justice	North Central Florida Regional Planning Council	Stakeholder Moderator	External
ght	UF Division of Continuing Education		External
son	UF/IFAS Taylor County - District II		Internal
rne	UF/IFAS Agricultural Education and Communication	Faculty Recorder	Internal
le	Lake City Chamber of Commerce		External

broff	UF/IFAS Family Youth and Community Sciences		Internal
Degner	UF/IFAS Food and Resource Economics	Faculty Reporter	Internal
arrison	UF/IFAS Family Youth and Community Sciences		Internal
asinski			External
sen	UF/IFAS Pinellas County - District IV	Faculty Provocateur	Internal
oehler	UF/IFAS Entomology and Nematology		Internal
cGrath	Opus International, Inc.		External
Norman	UF/IFAS Office of District Directors		Internal
Pickhardt	Arrow Environmental Services	Stakeholder Provocateur	External
Roberts	Florida Department of Agriculture and Consumer Services	Stakeholder Moderator	External
e Turner	UF/IFAS Food Science and Human Nutrition	Faculty Recorder	Internal

nd Int'l Business Climate/Demographics

Behr	Florida's Natural Growers		External
user	UF/IFAS Office of District Directors	Faculty Reporter	Internal
rdon	UF/IFAS Food and Resource Economics	Faculty Recorder	Internal
ter	Vitality Foodservice Inc.	Stakeholder Moderator	External
Hutcheson	UF/IFAS Palm Beach County - District V		Internal
oner	UF/IFAS Food and Resource Economics	Faculty Provocateur	Internal
op, Jr.	Florida Farm Bureau		External
ne Marshall			External
McKown	Florida Citrus Mutual		External
arks	Florida Department of Citrus		External
Stuart	Florida Fruit and Vegetable	Stakeholder Provocateur	External

wisher	UF/IFAS Family Youth and Community Sciences		Internal
hornsbury	UF/IFAS Indian River REC - Ft. Pierce		Internal
Coffman	Palm Beach County Horse Industry Council, Inc.		External
hondson	Florida Quarter Horse Association	Stakeholder Moderator	External
Frank	Sport Horse Owners & Breeders Association, Inc.		External
Green	UF/IFAS Veterinary Medicine - Large Animal Clinical Sciences		Internal
Hancock	Florida Thoroughbred Breeders and Owners Association	Stakeholder Provocateur	External
mbry	UF/IFAS Animal Science	Faculty Reporter	Internal
son	UF/IFAS Animal Science		Internal
eb	UF/IFAS Animal Science		Internal
tt	UF/IFAS Animal Science	Faculty Provocateur	Internal
nuffitt	UF/IFAS Marion County - District III	Faculty Recorder	Internal
Barber	Florida Peanut Producers Association		External
nnett	UF/IFAS Agronomy	Faculty Reporter	Internal
ecke	UF/IFAS West Florida REC - Jay	Faculty Recorder	Internal
eren	UF/IFAS Everglades REC - Belle Glade		Internal
Drew	UF/IFAS Levy County - District II		Internal
nckelman	Florida Sugarcane League		External
d Gallaher	UF/IFAS Agronomy	Faculty Provocateur	Internal
Gould	U.S. Sugar Corporation		External
th	Roth Farms, Inc.		External

ueneman	UF/IFAS Palm Beach County - District V		Internal
hine	Sugar Cane Growers Coop of Florida	Stakeholder Provocateur	External
rickland	FL Dept. of Ag. & Consumer Services, Div. of Marketing	Stakeholder Moderator	External
ddill	UF/IFAS Everglades REC - Belle Glade		Internal
right	UF/IFAS North Florida REC - Quincy		Internal
als/Dairy			
arthle	Florida Cattleman's Association		External
nink	North Florida Holsteins		External
ndemuhl	UF/IFAS Animal Science		Internal
yn	UF/IFAS Office of the Dean for Research	Faculty Provocateur	Internal
th Hall	UF/IFAS Dairy & Poultry Sciences		Internal
dley	Florida Cattlemen's Association		External
ne Jacob	UF/IFAS Dairy and Poultry Sciences		Internal
kle	UF/IFAS Animal Science	Faculty Recorder	Internal
Larson	Larson Dairy, Inc.		External
Linville	Zephyr Egg		External
Miles	UF/IFAS Dairy and Poultry Sciences		Internal
licevic	Lykes Brothers	Stakeholder Moderator	External
er	UF/IFAS Okeechobee County - District IV		Internal
atzke	UF/IFAS Dairy and Poultry Sciences		Internal
y	UF/IFAS Veterinary Medicine - Large Animal Clinical Sciences		Internal
ght	Southeast Milk, Inc.	Stakeholder Provocateur	External
ssing and Distribution			

alaban	UF/IFAS Food Science and Human Nutrition		Internal
ger	UF/IFAS Agricultural and Biological Engineering		Internal
Brown	ABC Research Corporation	Stakeholder Moderator	External
Cox	Sam Sebastian Winery		External
nann	UF/IFAS Microbiology and Cell Science		Internal
iswanger	The Minute Maid Company	Stakeholder Provocateur	External
rgent	UF/IFAS Horticultural Sciences	Faculty Recorder	Internal
iera	UF/IFAS Agricultural and Biological Engineering	Faculty Provocateur	Internal
oday	Con Agra Seafood		External
lliams	UF/IFAS Meat and Poultry Sciences		Internal
ansen	Waverly Growers Cooperative		External
eixeira	Waverly Growers Cooperative		External

aldwin		Stakeholder Provocateur	External
unt	UF/IFAS North Florida REC - Quincy		Internal
lass			External
ings	UF/IFAS Sumter County - District III		Internal
mpfer			External
istler	UF/IFAS Okeechobee County - District IV		Internal
levy	UF/IFAS Range Cattle REC - Ona	Faculty Recorder	Internal
Pate	UF/IFAS Range Cattle REC - Ona		Internal
yne	C. M. Payne and Sons, Inc.		External
ston			External

senberry	UF/IFAS Agronomy	Faculty Provocateur	Internal
lenberger	UF/IFAS Agronomy		Internal
Squires	Deseret Cattle and Citrus		External
cker	Florida Cattlemen's Association	Stakeholder Moderator	External
ildlife			
Blakeslee	UF/IFAS Forest Resources and Conservation		Internal
Carter	UF/IFAS School of Forest Resources and Conservation	Faculty Provocateur	Internal
an	Florida Forestry Association		External
Fox	Rayonier		External
er	UF/IFAS Wildlife Ecology and Conservation		Internal
lisson	Florida Department of Environmental Protection		External
isky	UF/IFAS Wildlife Ecology and Conservation	Faculty Recorder	Internal
und	South Florida Water Management District		External
Maynard	Florida Division of Forestry		External
Meara	Florida Game and Fresh Water Fish Commission		External
tier	UF Statistics		Internal
illing	UF/IFAS West Florida REC - Jay		Internal
tein	UF/IFAS School of Forest Resources and Conservation		Internal
Tanner	UF/IFAS Wildlife Ecology and Conservation		Internal
Tilton	UF/IFAS Putnam County - District III		Internal
Vogel	Natural Resources Planning Services	Stakeholder Moderator	External
hitfield	Estus Whitfield and Associates	Stakeholder Provocateur	External

Agrios	UF/IFAS Plant Pathology		Internal
rnold	UF/IFAS Indian River REC - Ft. Pierce		Internal
Browning	UF/IFAS Citrus REC - Lake Alfred		Internal
urns	UF/IFAS Citrus REC - Lake Alfred	Faculty Provocateur	Internal
tner	Costner Caretaking Services, Inc.		External
Crane	UF/IFAS Tropical REC - Homestead		Internal
tch	UF/IFAS Citrus REC-Lake Alfred		Internal
endrix			External
aVigne	Florida Citrus Mutual	Stakeholder Provocateur	External
ester	Alico, Inc.	Stakeholder Moderator	External
achata	Hickory Hills Citrus Nursery		External
Mayer	USDA-ARS		External
Raley	Raley Groves		External
Rouse	UF/IFAS Southwest Florida REC - Immokalee	Faculty Recorder	Internal
herman	UF/IFAS Horticultural Sciences		Internal
Shinn, III	Indian River Citrus League		External
pson	Simpson Fruit Company		External
yke	Arapaho Citrus Management, Inc.		External
Swanson	Brooks Tropicals		External

Blanton	UF/IFAS Collier County - District V		Internal
Butler	Florida Farm Bureau	Stakeholder Moderator	External
umbly	Florida's Natural Growers		External

vis	21st Century Solutions	Stakeholder Provocateur	External
rson	UF/IFAS Food and Resource Economics	Faculty Provocateur	Internal
ilreath	UF/IFAS Manatee County - District IV	Faculty Recorder	Internal
Mainster	Redlands Christian Migrant Association		External
lartinez	Lykes Bros. Inc.		External
oreno	Farmworker Association of Florida		External
ka	UF/IFAS Southwest Florida REC - Immokalee		Internal
ownsend	UF/IFAS Hendry County - District V		Internal
otter	UF/IFAS FL Leadership Program for Ag. & Natural Resources		Internal
nerson	Citrus & Vegetable Magazine		External
inan	Tampa Tribune		External
assett	UF/IFAS SHARE Development		Internal
rne	Oregon State University		External
Cheek	UF/IFAS Office of Dean for Academic Programs		Internal
krell	Florida Farm Bureau Federation		External
onnor	UF/IFAS Office of Dean of Academic Programs		Internal
DiPietro	UF/IFAS Veterinary Medicine - Administration		Internal
Jones	UF/IFAS Office of Dean for Research		Internal
e	UF/IFAS Office of Vice President for Ag & Natural Resources		Internal
nbardi	Univeristy of Florida		Internal
rtin	UF/IFAS Office of Vice President for Ag & Natural Resources		Internal

cher	UF/IFAS Educational Media and Services		Internal
mith	UF/IFAS Forest Resources and Conservation		Internal
rtiller	UF/IFAS Food and Resources Economics Dept.		Internal
got, III	UF/IFAS Office of District Directors		Internal
e Waddill	UF/IFAS Office of Dean for Extension		Internal

l Horticulture

Balkom	Landscape Maintenance Association		External
rett	UF/IFAS Environmental Horticulture	Faculty Provocateur	Internal
usky	Florida Nurserymen & Growers Association	Stakeholder Moderator	External
asey	Sarasota County Government	Stakeholder Provocateur	External
ramling	Tampa Bay Wholesale Growers		External
Guy	UF/IFAS Environmental Horticulture		Internal
kins	UF/IFAS Central Florida REC - Apopka		Internal
	Florida Fern Growers Association		External
ox	UF/IFAS North Florida REC - Monticello	Faculty Recorder	Internal
ell	UF/IFAS Environmental Horticulture	Faculty Reporter	Internal
arfenberg	Yoder Brothers Inc.		External
za	American Farms		External
nps	UF/IFAS Central Florida REC - Apopka		Internal
ts	Association of Floral Importers of Florida		External
lfret	UF/IFAS Gulf Coast REC - Bradenton		Internal

nham		Stakeholder Moderator	External

uchanan	UF/IFAS Ft. Lauderdale - REC		Internal
uthers	Emerald Island Turf, Inc.		External
ar	UF/IFAS Ft. Lauderdale - REC	Faculty Recorder	Internal
Emino	UF/IFAS Office of Dean for Research		Internal
ydu	UF/IFAS Central Florida REC - Apopka		Internal
lle	President L.M.A.		External
kson	Florida Golf Course Superintendents Association	Stakeholder Provocateur	External
rrell	Florida Turfgrass Association		External
iller	UF/IFAS Environmental		Internal
rtain	UF/IFAS Soil and Water Science		Internal
nruh	UF/IFAS West Florida REC - Jay	Faculty Provocateur	Internal
hite	Turfgrass Mgmt. Consultant, Inc.		External

easley	A. Duda & Sons, Inc.	Stakeholder Moderator	External
tliffe	UF/IFAS Horticultural Sciences		Internal
on	UF/IFAS Southwest Florida REC - Immokalee	Faculty Recorder/Reporter	Internal
"Chic" Hinton	Florida Strawberry Growers Association	Stakeholder Provocateur	External
Hochmuth	UF/IFAS Suwannee Valley REC - Live Oak		Internal
ar Klassen	UF/IFAS Tropical REC - Homestead		Internal
enig	Rosies Organic Farm		External
e Mellinger	Glades Crop Care. Inc.		External
B. Smith	Tommy B. Smith Farms		External
n Sickle	UF/IFAS Food and Resource Economics		Internal

Vavrina	UF/IFAS Southwest Florida REC - Immokalee	Faculty Provocateur	Internal
lderspoon	Ian Industries, Inc.		External
sources (Water, Air, Land and Natural Systems)			
Aller	Florida Dept of Agriculture and Consumer Services	Stakeholder Moderator	External
rown	UF/IFAS Soil and Water Science		Internal
inchum	UF/IFAS Office of District Directors	Faculty Recorder	Internal
asgow	USDA/NRCS		External
Graham	UF/IFAS Agricultural and Biological Engineering		Internal
nsby	UF/IFAS Soil and Water Science		Internal
es	UF/IFAS Agricultural and Biological Engineering		Internal
lahey	UF/IFAS Southwest Florida REC - Immokalee		Internal
arborough	Suwannee River Water Management District	Stakeholder Provocateur	External
efer	UF/IFAS Wildlife Ecology and Conservation	Faculty Provocateur	Internal
ims	Holland & Knight		External
mith			External
nderhill	Florida Association of Conservation		External
ung	Florida Chapter of The Nature Conservancy		External
Family			
rber	UF/IFAS Liberty County - District I	Faculty Provocateur	Internal
ook	UF/IFAS Family Youth and Community Sciences		Internal
ilworth	Department of Children and Families		External
rrer	UF/IFAS Family Youth and Community Sciences		Internal
wkins	Dist IV Pres		External

Laster	Dept. of Elder Affairs		External
Miller	UF/IFAS Youth Development	Faculty Recorder	Internal
eth Salisbury	UF/IFAS Osceola County - District III		Internal
elly	Child Care Resources	Stakeholder Provocateur	External
Stephens	UF/IFAS Duval County - District II		Internal
Tompkins			External
orres	UF/IFAS Family Youth and Community Sciences	Faculty Reporter	Internal
yatt		Stakeholder Moderator	External

bell	Univ of Florida Foundation		Internal
azueta	UF/IFAS Information Technologies		Internal

C:/CHERIB/