2007 University of Florida Research and Extension and Florida A&M University Extension Combined Annual Report

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I. Report Overview

1. Executive Summary

Florida is considered an urban state with well over 18 million residents and another 88 million annual tourists. And yet Urban Florida is agricultural Florida with agriculture second only to tourism in economic indicators. Based on a recent agricultural analysis Florida's total land area is nearly 54,000 square miles, and the state has more than 42,000 or 72% of the total area, in agricultural and forestry land producing fruits, vegetables, ornamental plants, dairy and meat products, forest products and seafood—plus an array of industries that provide supporting inputs and services to those agricultural enterprises. The 14 largest counties contain 67% of the state's total population and account for much of the agricultural production.

Overall, agricultural industries generate over $62 billion in output impacts, including $31 billion in value-added impacts. These industries support more than 648,000 jobs that generate an additional $19 billion in labor income. State and local governments received almost $3 billion last year in indirect business tax. Florida Extension (UF/IFAS 1862 & FAMU/CESTA1890) and UF/IFAS 1862 research had a lot to do with providing successful outcomes for critical needs leading to strong agricultural value added impacts.

The economic analysis divided the state into eight regions including a core metropolitan area and surrounding counties to define the agricultural employee commuting patterns and break down the agricultural value in each of these regions. The value of each region's impact is influenced by the number of counties included, population levels, size of metro areas, and the size and scope of agricultural economic activity in each region.

The regional economic impacts in the agricultural industry were greatest in the Orlando area with $16.9 billion, followed by the Miami-Dade/Ft. Lauderdale area with $15.8 billion. Next were the Tampa/St. Petersburg area with $9.5 billion and the Jacksonville area with $7.6 billion in total agricultural output impacts. Following those were the Sarasota-Bradenton area with $2.4 billion and Southwest Florida with $2.1 billion in total agricultural outputs. The land grant universities (UF/IFAS and FAMU/CESTA) are working closely with agricultural industry in all of these regions.

UF/IFAS Extension and research are active in all of these regions with county offices in all 67 counties and 19 research and Education Centers located around the state in critical agricultural areas. Research in Florida continues to provide cutting-edge, economically valuable results that keep Florida competitive in the global marketplace while Extension faculty—specialists in their fields—provide research results through unbiased, well-developed educational programs and one-on-one consultations. They also provide websites for 24/7 information. The Extension main website, http://solutionsforyourlife.com, provides not only information on thousands of subjects but also provides information on faculty and county office locations for additional answers. This website received over 537,302 hits in 2007 and the hits continue to increase each month. Hits are from across the United States with residents of Florida and California using it the most.

Both Extension and Research in Florida do long-range planning to identify grassroots critical needs that are part of the land-grant mission. Research and Extension also monitor critical needs, through constant contact with industry and representative of the underserved and under-represented, in order to stay current with changing problems and emerging trends.

Critical needs are divided into goal and focus areas. Teams of State and County Extension faculty from the University of Florida/IFAS (1862) and Florida A&M University (FAMU/CESTA) (1890) and UF research specialists develop program plans that outline the critical situations and rationales, target audiences, activities, outcomes and impacts for each critical need. Faculty develop activities according to these standardized plans to allow for aggregation of information. Each goal and focus area is both merit and team reviewed and all research projects undergo a peer review process. Goal and Focus teams can be seen at http://pdec.ifas.ufl.edu.

Many programs done by Florida Extension were multistate and integrated. In the area of multistate over $3.9 million dollars in county, state, and federal funding were used in the development and implementation of successful programs involving a multitude of states and critical areas. Florida 1862 met their multistate requirement of 25%. This sharing of resources has provided Florida with some excellent programs and additional resources freeing up funds and time for additional programs. In many cases, multistate activities have been shared through the development of Extension statewide programs— an area Florida hopes to develop more fully over the next several years. These statewide plans are set up as logic models so that all faculty can use them as a "roadmap" from the situational statement to the impact. These program plans as they are called can be found at http://pdec.ifas.ufl.edu. In the area of integration Florida continues to work towards a strong integrated research/extension program. Both research and Extension met the required 25% integration in programs and projects.

FAMU/CESTA continues to work with UF/IFAS Extension on many of the goal and focus teams. But they are working hard to improve the quality of life for many of Florida's residents living on small Farms. They have worked particularly hard on herd health and safety, improved value in goat farming, and programs to improve career choices for youth and better food

Florida is a large, diverse state with critical needs that cover a broad spectrum of issues from urban/rural interface issues to dealing with more traditional needs such as invasive pests. .In 2007 the Florida UF/IFAS and FAMU/CESTA Extension faculty were extremely productive in providing over 9601 formal, research based educational programs across the state.. In direct

contacts including group meetings, private consultations, phone calls, and email messages they reached over 2.7 million people (or more than 13% of the total population) who came to the land grant university with questions and critical needs. The population Extension worked with was extremely diverse in sex, race, socioeconomic and age. This report provides a small sample of some of the highlights of Florida's Extension programs this year.

The economic indicators in Florida over the last six months have been failing and Florida has begun to move into a budget crisis that is directly affecting the Florida land grant university. Devolution from the federal level to the county level is affecting funding. A recall for 4% of state funds, the chance of additional cuts on the counting level and expected additional 6% state cut over the next six months are all impacting our ability to fund important programs and projects. The forecast for 2008-2009 is also expected to be gloomy. The Florida land grant university continues to look for other ways to make up for lost revenue and faces the possibility ofthe possible reduction in faculty and staff over the next year.For example to find additional revenue, Research in Florida is working hard to increase the number of grants and grant dollars they are awarded. In 2007 Florida increased grant dollars by over 9%. Research is offering training and assistance in filling out applications for all faculty interested in applying for grants and this effort is paying off.

Research also continues to find solutions to many of the problems that affect Florida agriculture, natural resources, energy, youth, families and communities. Research faculty make this information available through in-service training for other faculty especially Extension, they produce exceptional articles in peer-reviewed journals, and they apply for and obtain patents that provide products that can be used to solved the problems identified by the long range plan. Research also remains at the cutting edge looking at emerging trends and looking for solutions before the issues arrive on our shores. They also work with scientists in other countries to find solutions for problems such as plant pests and diseases that we monitor and know are coming closer to Florida's shores. Because Florida is an import state it is estimated that one new disease, pest or invasive plant arrives in Florida each month.

Following is a highlight of some critical needs where the Florida land-grant university are finding useful solutions. These are some examples of programs and projects that were not included in the Planned Programs section of the AREERA but which are of great importance to the citizens of Florida.

Urban Communities

Dealing with Complexity in Urban Counties

Value of IFAS/Extension and research Faculty in Complex State and County Committees—In all urban counties problems are complex. Because agriculture has a huge economic impact in most urban counties input from Extension agricultural specialist such as the county Extension faculty can be critical to finding the best solutions for county-wide issues. For this reason, county Extension Directors (CEDs) serve on many committees within state government and other organizations that make policy and regulations. For example, the CED for Miami-Dade serves on the Natural Systems Adaption, Economic, safety, and health sub committees along with SART, the South Florida Water Management District committee, climate change advisory committee and many others. Not only is Extension able to provide unbiased, relevant information in the problem solving process, but they also have a state research university and national land grant university behind them to provide almost limitless access to questions related to agriculture and agricultural issues both existing and projected.

Using Volunteers to Improve Communities

Developing Sustainable Environment through the Use of Volunteers—Urban populations are dense and it would be impossible for the limited number of trained UF/IFAS Extension faculty to reach the numbers of people who need problems solved. Master Gardeners and Florida Yards & Neighborhoods (FYN), both Extension programs provide thousands of volunteers annually to address the needs of urban populations in developing a sustainable environment both in their yards and communities.FYN is shaping the direction of new housing developments in Florida by encouraging and educating homeowners and developers about Florida-friendly landscapes and principles. As of July 2007, more than three-fourths of Florida counties had active Master Gardener and FYN programs, including all urban counties.During 2005, more than 3,765 Master Gardener volunteers contributed 396,694 hours to local county horticulture extension educational programs providing $7,155,566 worth of services to citizens of Florida. For example, FYN volunteers and faculty in the Tampa Bay area were invited to collaborate on the Tampa Bay Estuary Program, which is charting the course to preserve this estuary system.

Volunteers Acting as Stewards For Florida's Lakes—Two thousand volunteers are involved in urban Extension LAKEWATCH programs,monitoring the water quality of 600 lakes and 50 coastal sites each month.Many of these lakes, rivers and coastal areas are located in heavily populated areas. An example is the Palm Beach Lagoons. Both the Indian River and Lake Worth Lagoons are urban estuaries. Environmentally, they provide essential habitat for many species including the endangered West Indian Manatee. Economically, they support a multi-million dollar fishing, shellfish harvesting, tourism, agricultural and recreational boating industries.Socially, the Lagoons are community resources that enhance the quality of life for the residents of South Florida. Extension programs increase citizen understanding of the economic, social, and environmental significance of the Lagoons, nonpoint source pollution, and are critical in engaging the public in the management and protection efforts.

Dealing with Disaster

Disaster Management—Miami-Dade County has the largest population in Florida with 2.3 million residents.It has the second largest agriculture production in the state with an economic impact of over $1 billion annually. Miami-Dade County agriculture industry were impacted by three hurricanes within two months in 2005 causing some $860 million in losses to crops and

infrastructure. An estimated loss of 50-55% of grove trees were destroyed or severely damaged which will have a multi-year recovery for fruit crop yields. Vulnerabilities of nursery shade/green house structures were very apparent. Tree issues were widespread and need addressing from a variety of aspects. Extension Faculty have participated as an invited team member of the Local Mitigation Strategy Working Group, Terrorism Advisory Committee, and SART. They serve as part of the working group of the Office of Emergency Management as the lead agriculture resource in the county. Extension faculty worked with 792 people in this area last year discussing emergency preparedness in the agricultural sector and assisted operators in developing and maintaining a disaster plan to deal with future emergencies. Extension through its 67 county network is also able to provide support to counties impacted by emergency situations by adding to the infrastructure (satellite phone systems, generators etc.) during times of emergencies as well as providing valuable information in the areas of food safety, and animal and human safety.

Battling pests

Subterranean termites--Subterranean termites have a profound economic impact in the United States causing $11 billion in damage. 80% of this can be attributed to building repair costs. Florida accounts for approximately 20% of the termite market with damages around $1.76 billion. The Formosan termite, a fairly new introduction to U. S. shores and dubbed the "super termite" because of its aggressiveness and destructiveness, costs homeowners and the government about $2.2billion annually in repairs and prevention efforts in the 11 states in which it has been found. Monitoring by Extension has shown that the Formosa termite is working its way through Florida at an alarming rate and with increasing destruction and cost. Regardless of which kind of subterranean termite they are all destructive. A UF/IFAS researcher has developed several solutions to the battle against termites. One, a termite bait, is now used by about 30% of the market share for subterrean termite control in the U.S. In Florida the use of this bait is estimated to have saved Florida citizens about $528 million in potential termite damage. An electronic termite monitoring system was also developed by an IFAS researcher and was commercialized in 2002 and is widely used. Another termite bait system has also completed research trials with great success and will be released globally in 2009. This information is provided to clientele across the state in Extension pesticide programs and trainings.

Pesticide Certification— The agriculture and natural resources industries are major contributors to Florida’s economy, generating billions of dollars of revenue and tax contributions and hundreds of thousands of jobs every year. In 2000, Florida’s agriculture and natural resources industry generated nearly $62 billion in output impacts, $31 billion in value-added (output impacts less Cost of Goods Sold), and almost $3 billion in indirect business taxes for state and local governments. These industries supported 644,673 jobs that generated $19 billion in labor income. According to the Crop Life Foundation, for every $1.00 invested on fungicides in the state’s major agricultural commodities, growers reap $32.47 in benefits. The same organization estimated that there is an annual loss of $485 million due to weeds in the state’s major agricultural commodities. Losses due to insects, mites, and nematodes have been estimated to be approximately 20% ($5.5 billion) for the state’s major agricultural commodities. The National Safety Council (2002) has identified agriculture operations as the nation's most dangerous occupation in the United States and part of these accidents are attributed to the use of chemicals and pesticides. The Florida agricultural industry comprises over 40 major commodity groups on both small private family farms, large corporation farms and industry both urban and rural that supports the farm community.Because of the diversity of Florida’s workforce, agricultural safety must take into account the variety of cultures, literacy levels, and languages in a continually evolving regulatory environment.

One area of special importance is pesticide certification programs which are required by the state of Florida for those who commercially apply pesticides.Certification courses are taught state wide by UF/IFAS Extension faculty prior to taking the certification exam. For example, The Central Florida Pesticide Training Team administered 728 pesticide exams in the urban counties, Orange, Osceola, Seminole and Lake during the first 11 months of 2007 with 253 participants being given after training classes. Those attending training had a 14% increase in passing percentage and an average grade increase of 5 points compared to walk-ins without training. Many businesses require certain employees to obtain pesticide licenses as a condition of employment or promotion.

The results: 192 exams administered for 235 people, 125 people attended a review for initial certification and 365 attended training for CEU’s. An end of year survey was sent in November to 69 attendees of a program with a 19% return. All 5 of the recommended practices were being used by 61% of the survey responders. 93% of the survey respondents that took an exam felt the training helped them to pass.

Since 2006 over 16,000 individuals have participated in pesticide training, certification and CEU classes, as well as a wide variety of Extension educational seminars and presentations.

Eradicating tree termites – UF/IFAS, working with the Department of Agriculture, eradicated an exotic tropical tree termite discovered in Broward County.This pest could have caused more than $100 million each year in damage.With an investment of $50,000, the pest is no longer a threat.

Urban pest control – Florida’s urban pest control industry is first in value in the nation. National industry estimates of the cost of termite control, repair and litigation are between $2 billion and $5 billion, much of that originating in Florida.Partnering with FDACS and industry, UF/IFAS is working with pest control operators to mitigate potential damage to 8.5 million housing units.The training facility is located in Orange County at the Mid-Florida Research and Education Center.

Natural fire ant control– IFAS researchers have found a natural enemy (bio-control agent) to the fire ant.The South American phorid fly decapitates fire ants and is being introduced to urban community pest control operators and citizens through Extension

Africanized Honey Bees – In 2005, a UF extension specialist developed a first responder Africanized Honey Bee program.As of 2007, more than 3,600 first responders, extension personnel, outdoor and recreation workers, pest operators and

school employees have been trained through the program.

Saving energy and small farms

New Alternative Energy Sources that Improve the Environment--IFAS researchers are working on alternative energy sources. An example is cellulosic ethanol which turns biomass such as the biosolids and composts mentioned above into a viable fuel source. 40% of Florida's solid waste could be used in this area which would reduce waste management costs state wide by $351 million as well as providing a source of cleaner, cheaper fuel for the state and for the agricultural industry.

Light sensors save money– Pinellas County extension agents worked with county officials to find ways to reduce energy use and costs. County officials plan to install more than 1,000 light sensors in 41 county buildings, lowering thermostats and shutting down buildings during off hours—for a savings of $786,000.

Small farms, alternative enterprise – IFAS has the most frequently visited web-site offering information on small farms and alternative enterprises. Fifteen regional events coordinated by Extension during the past 18 months have been held for over 1700 participants. Training sessions focus on management and sales, markets, regulations, and production basics of small farming enterprises.

Cleaning Up Communities

Waste Management and Biosolids--Florida is expected to increase its population by 5.5 million people by 2025 and double that by 2050 when the population is expect to surpass 32 million (almost double the present population). Many of these people will settle in heavily urban areas. With each person generating 1 to 2 tons of solid waste each year, waste disposal and recycling will become critical issues. As current landfill space shrinks and opposition to new landfills grows, alternative waste management strategies are needed that also have water quality protection at the forefront. About 70% of today's wastes are non-hazardous organic materials that are "cleaner" than ever.Biosolids and composts made from municipal solid waste and/or yard trimmings can be safely applied to land with negligible threat to water quality if properly managed. For every ton of biosolids and compost removed from landfill process there is a savings of approximately $48 to $50. Reducing solid waste by just 10% based on present population could be a savings of over $114 million dollars state wide in solid waste processing and would improve ground water and soil quality which would increase savings further. However, local laws and ordinances may prohibit land application even though science advocates that the practice is sustainable. Extension has developed programs to support regional planning, collaboration and information sharing to enhance the delivery of science-based education to local governments, waste generators, haulers, applicators and land owners regarding sustainable land application of non-hazardous wastes consistent with water quality protection.

Economic Value of Youth in Communities

Economic Value of Youth Programs in Florida--Research shows that youth who belong to clubs and organizations have a better sense of community, family and self and are less likely to join gangs. They are more willing to take on civic responsibility and to become productive citizens in later life. They are far less likely to get into serious trouble. Research also shows that for every juvenile that must be incarcerated the annual cost is more than $70,000 and one study showed that once youth have been incarcerated more than half return to prison within the first three years after release. In Broward County 25% of the 1.7 million residents are school-age youth.A significant number of these youth reside within an At-Risk/Urban Community.Part of the 4-H Extension mission is to create supportive environments in which culturally diverse youth and adults can reach their fullest potential. 4-H plays an active role in educating both adults and youth of these high risk communities. Last year Broward County 4-H worked with several organizations that focus on inner city/urban communities. 4-H reached 3,642 at risk youth in 4-H clubs and county school programs, and another 680 in 30 urban after school programs.

Global Economic Competitiveness

International work fosters peaceful collaboration – An IFAS scientist is collaborating with colleagues in Uzbekistan to help that country, part of the former Soviet Union, modernize its biological research facilities.The goal is to help the country shift focus from weapons of mass destruction to peaceful science to protect the citizens from pathogens.This international work supports IFAS's work with invasive pathogens and ultimately helps protect U.S. citizens from emerging pathogens.

Boosting Florida orange juice exports to Canada – IFAS scientists explored two ways to boost sales and gain market share for Florida orange juice in Canada – either dropping prices or using advertising.Although U.S. citrus processors have done well without advertising in Canada, the results showed that advertising is the best marketing strategy.A 1% increase in advertising could increase sales in Canada by 1.2%.

Florida Economics and Policy Development

Integrating science and environmental policy to benefit Floridians

Finding ways to produce food more economically – IFAS research on iron alternatives for citrus trees, the development of new crops such as bahiagrass and strawberries that require few chemicals, and tree canopy analysis that allows for less pesticide use are all ways IFAS has helped reduce growers' costs. Innovative shelf life-prediction models for fresh fruits and vegetables have reduced waste, provided cost-savings for retailers and better quality produce for consumers.IFAS breeding programs significantly reduce farmers' carbon footprints by developing species that require less water and chemicals to grow.

Conserving water and energy –IFAS research and extension programs show homeowners can reduce by half the amount used to water landscapes by using soil-moisture sensing technology. For new homes permitted in 2005, 5 billion gallons a year could be saved with a reduction of $32 million in water bills. IFAS researchers working on alternative energy sources such as cellulosic ethanol show a potential waste management cost savings of $351 million if solid waste were used as a source.IFAS

helped tropical fruit and ornamental plant growers reduce irrigation needs by 60% to 90% with the use of soil water sensors.

Pests and disease, climate and urban change

Invasive pests and diseases – Florida has experienced continuous economic damage from the introduction of human, plant and animal pests and diseases ranging from West Nile Virus to citrus canker, citrus greening and tick-vectored cattle diseases.The attempted eradication of citrus canker that began in 1995 cost state and federal government as well as the citrus industry more than $2 billion before eradication was declared impossible in 2006.The citrus industry, which produces approximately 80% of the nation's citrus, is now challenged with the introduction of citrus greening disease. IFAS researchers remain focused both on the disease as well as accurate assessment of economic losses.

Reducing costs by preventing disease and better nutrition

New disease prevention – IFAS medical entomologists are working to prevent introduction of antibiotic resistant dengue fever as well as other vector-borne diseases.IFAS scientists at the Florida Medical Entomology Laboratory developed new computer models that enable predictions of mosquito-borne disease transmissions around the world thus protecting Florida from economically debilitating outbreaks of disease. A mosquito-borne disease outbreak with 100 to 1,000 cases would severely affect Florida's health infrastructure with an estimated cost to the tourist industry of $100 million.

Emerging Pests and Diseases

Keeping Florida safe

Solving mosquito-borne diseases – West Nile fever, Dengue fever, Eastern Equine encephalitis and St. Louis encephalitis are all spread by mosquitoes. IFAS faculty from the Florida Medical Entomology Laboratory (FMEL) in Vero Beach have developed methods using water table hydrology, rainfall pattern, and biological factors to predict outbreaks of mosquito-borne diseases in Florida, allowing control measures to be activated beforehand.

Creating a secure homeland –IFAS scientists at FMEL developed new computer models that enable predictions of mosquito-borne disease transmissions around the world, thus protecting Florida from external epidemics.The outbreak of just one disease, such as the Dengue fever present now in Puerto Rico, would cost Florida millions in health care and lost tourism.

Preventing animal disease

Infectious disease and wildlife conservation –Collaborative research between UF Wildlife and Ecology Conservation researchers, the Veterinary School and the Florida Fish and Wildlife Conservation Commission revealed that wild turkeys and sandhill cranes throughout Florida have been exposed to infectious bursal disease.This is the first study to investigate the presence of this virus, common on poultry farms, in wild birds of North America.This finding has important implications for the Whooping Crane Reintroduction Program as it is believed that IBD exposure is responsible for two bird deaths.IFAS researchers are working to ensure this virus doesn’t impact the recovery of the endangered whooping crane.

Biotechnology and Genetics

Making food better, fresher

Solving citrus greening – IFAS research has developed molecular methods for detecting the bacterium that causes citrus greening.Several research labs are using molecular approaches to create greening-resistant citrus plants. Latest control strategies are being provided through Extension programs.

Quorum sensing systems in bacteria – IFAS researchers are deciphering the chemical language that bacteria use to communicate with one another and to attack plants or animals. The goal is to create plants resistant to bacterial attack, such as soft rot of tomatoes, by disrupting their signal systems.

Fragrance in flowers – IFAS research has engineered roses and other flowers with enhanced aroma, and thus greater marketability.Roses and many flowers had lost their fragrance due to intense breeding for traits other than fragrance, such as color, size, and longevity.

Corn genome mapping – A concerted effort by horticultural sciences faculty members is moving toward the genetic identification and molecular cloning of all functional genes in the corn genome. The goal is to identify and map all corn genes of agricultural importance. Researchers have already identified a target gene for genetic manipulation and its variants have been made, placed back into corn and expressed. One such gene triples seed weight and yield. Conventional breeding programs increase corn yield just 1% each year.

Strawberry genome – IFAS research has begun to map the strawberry genome.When complete, this will allow targeted breeding for desirable traits and enhance the state’s strawberry production.

Stronger peanuts– Nematodes are a serious threat to peanuts in the sandy soils of Florida.IFAS peanut geneticists are incorporating genes for resistance to the pests.

Advancing Agriculture

Value of Environmental Horticulture in Urban Counties

Value of Horticulture in changing urban areas—While citrus remains Florida's major agricultural crop, the environmental horticulture industry which includes landscape plants, flowers, foliage and turfgrass and related landscape businesses is showing the fastest growth even with the economic downturns in housing and tourism. According to a recent study the growth in the environmental horticulture industry is the increasing demand for both nursery and landscape plants by the states rapid urban developments. This is also the reason much of this industry is located near or at the edge of large urban areas. Examples can be seen in the Orange/Seminole county areas where many nursery's and hot houses produce thousands of house plants that are sold both locally and internationally. The environmental horticulture industry is now at 6.9 billion and is expected to grow into the largest agricultural industry in the state if trends continue. Along with this is a large urban lawn and garden retailing business estimated at approximately 1.3 billion annually. Almost every month a new disease or pest reaches Florida from some distant port. Any one of these could be disastrous to the industry. UF/IFAS research and Extension are constantly monitoring and preparing research and educational programs to offset potential damage. For example, in 2006 when the Pink Hibiscus Mealybug arrived, its arrival could have devastated the landscape industry. Instead IFAS had prepared. They knew they couldn't stop the pest from entering the state but they could introduce prediators well in advance that would keep this bug under control. As hoped, although it is in Florida it is not a danger to the level that was originally anticipated. The same process is now being prepared for another pest called Red Palm Mite. If and when it reaches Florida it could annihilate not only the existing palms across the state but also the palm industry in Florida.

Helping farmers and ranchers

Specialty crops – American consumers are interested in specialty crops, such as ethnic vegetables and fruits, organic products, fresh herbs, cut flowers, hydroponic vegetables and tropical fruits.Florida leads the nation in the variety of specialty crops produced, possible more than 300 crops, or more.IFAS research and extension programs demonstrate how to grow these crops that contribute together more than $200 million to the state's farm gate value.

Spotting disease early – IFAS faculty are conducting soybean rust research to aid early detection through 'sentinel' monitoring plots.A GAO report estimated that the U.S. soybean industry saved nearly $300 million because of the early warning system.

To our health –IFAS scientists have released several new varieties of fruits such as tomato, strawberry and blueberry with greater quality and health attributes.Breeders also have released high oleic acid peanut varieties that help lower cholesterol.

Fending off exotic pests

Africanized Honey Bees – Beyond public safety concerns, Africanized Honey Bees could have their greatest impact on beekeepers, by driving them out of business. Florida is fourth in the nation in honey production, producing 17 million pounds of honey each year.IFAS scientists are working to ensure that honey bees remain viable food pollinators.

Molecular technology advances

Making everything better – IFAS molecular biologists are creating high-folate tomatoes, better-smelling flowers, tomatoes with improved flavor and disease resistance, insect-resistant forage grass, virus-resistant sugarcane, beef cattle tolerant of heat and corn with improved seed quality. These genetic improvements mean higher-quality food for consumers.

Help for allergy sufferers – An IFAS geneticist is working to create an allergen-free peanut that has huge implications for the snack, condiment and candy industries.Peanut allergies are the most common and often the most severe of all food allergies.

Using rice to help citrus – IFAS microbiologists are working to use a gene that protects rice from bacterial blight to help citrus trees resist citrus canker. If successful, the technology could help save a key Florida industry.

Working to save the planet

Helping the Everglades – IFAS scientists and extension faculty, working with growers in the Everglades Agriculture Area to balance crop needs with the needs of the fragile ecosystem downstream, developed practices that reduced phosphorus runoff into the Everglades by 70%.

Fighting pests without pesticides –Integrated Pest Management systems is a large area of emphasis for IFAS scientists.Examples of IPM include methyl bromide soil fumigant alternatives and a pesticide-free production system for tomatoes that controls tomato spotted wilt virus.

Soil carbon monitoring – Scientists have developed a new method for monitoring soil carbon over time and space, which provides more reliable estimates for agricultural producers who engage in carbon sequestration contracts and carbon trading.IFAS scientists are working to determine the potential sequestering capacity of Florida farmland and how to produce crops and livestock while maximizing carbon sequestration.

Crop efficiency – IFAS has developed more efficient crop and livestock production practices and systems, such as inserting bahiagrass sod in a cotton and peanut rotation to restore soil organic matter, reduce erosion, and increase farm profit by 4 times over a system without the sod rotation.

Spreading the word

Ahead of the crowd – Organic agriculture is one of the fastest growing sectors of the agriculture economy, growing almost 20% per year.IFAS developed one of the first degree programs in the country to meet the growing demand for trained professionals in organic agriculture.

Helping industry – Research and extension faculty have helped Florida's clam industries establish and expand in Cedar Key, Southwest Florida and the Oak Hill area on the east coast.No other area in the nation can match Florida's excellent production conditions, and its clam industry has had a 34-fold increase since 1989 to over $12 million in sales.

Growers conserve water

Plants that need less water – IFAS plant breeders are developing varieties of several crops, including turfgrass, that are more drought-tolerant and need less irrigation.

Drip irrigation – Water-efficient irrigation technologies implemented by IFAS, such as drip irrigation for vegetables and micro-irrigation for nursery and citrus, have helped farmers use 50% less water to irrigate than they used 20 years ago.

Saving water, using fewer chemicals – IFAS faculty are developing high-tech instrumentation to help farmers save water and pesticides. For example, IFAS scientists have developed new irrigation sensors that can control irrigation frequency, saving more than 60% of the water traditionally used on tropical fruit and ornamental plants.Reductions in pesticides are realized by IFAS technology that stops spraying at the point of a missing plant or tree.

Adding Economic Value through Clean Water A recent study by the Northwest Florida Water Management District reported that 55% of the water flowing into Wakulla Springs included nitrogen from Leon County and Tallahassee. Today the nitrate load is four times what it was just two decades ago. The Springs are important to both the environment and economy of Wakulla County. One report indicates that visitors to the springs add $13.6 million to our economic base each year. Unfortunately, even casual observers to the Springs can notice the water quality changes to one of Florida's largest springs. Water quality changes in several near-by sinkholes that communicate with Wakulla Springs (Cherokee, Indian, Leon, Ames) have been documented by the Department of Environmental Protection and the Northwest Florida Water Management District. Long-term conservation of the Wakulla Springshed will require widespread public support for making politically difficult decisions in the future. Choosing a course of sustainable use and development of the springshed's land surface and aquifer will require an electorate educated about the unique, world-class yet unforgiving hydrogeology of this fantastic plumbing system. Today's young people who will be tomorrow's community leaders need to know how this hydrogeologic system works, and understand its requirements for sustained delivery of essential economic and ecological services. They need to know how to conserve the Springshed as their natural resource base for sustainable economic development – including the quality and quantity of their drinking water, ecotourism, outdoor recreation, and quality of life.

Set it up, save water – The Citrus Irrigation Scheduler, a tool on the Florida Automated Weather Network (FAWN), provides a site-specific irrigation schedule. Growers log on, punch in specifics about their irrigation system and the computer creates a two-week watering schedule. It's been available to growers since February 2007 and has had 1,060 hits as of October 5, 2007. A site-specific irrigation scheduling and nutrient balance model with record-keeping functions is currently being evaluated by growers and should be released later this year.

Better landscaping with less water – IFAS has programs in three-fourths of all Florida counties to train homeowners, builders, developers, landscape workers and architects in fertilizer and water use as well as proper pest control. In Sarasota and Manatee counties, more than 1,500 landscape and pest management employees participated in 26 professional development classes during 2006 and the first half of 2007.

Florida's Environment and Natural Resources

Creating healthy forests

Quantifying carbon rates – Southern pine forests have among the highest terrestrial carbon sequestration rates in the world – 3.5 tons of carbon per acre per year.Research quantifying these rates is critical as the U.S. begins to participate in carbon offset markets, and Florida forest landowners have the potential to benefit economically.

Recreation boosts local economies – Research helped identify the importance of recreation to the economy and jobs in a forested area.In the Croom Motorcycle Area in the Withlacoochee State Forest, off-highway vehicle recreation generated $21.6 million in annual income and 318 jobs in the four surrounding counties.

Phosphorus loading is not from forests –Water research in forested areas revealed that the primary source of phosphorus loading into hyper-eutrophic Newnans Lake comes from naturally occurring geologic sources, rather than the surrounding pine plantations.

Cities can create more wind-resistant urban forests –Scientists who studied more than 180 trees species following 10 hurricanes showed that Florida landscapers and homeowners can create a more wind-resistant urban forest. Their recommendations include ensuring that trees have sufficient rooting space, planting trees in clusters, and using more wind-resistant species.An Extension toolkit and Web site were developed and 85 presentations delivered to more than 12,000 arborists, landscapers and homeowners in Florida.

Waste wood can provide energy –Residues from logging, urban wood waste, and trees from overstocked pine stands can provide the majority of woody biomass needed to produce 120 megawatts of energy per year for three north Florida communities.

Preserving fisheries

Conserving an overfished marine ecosystem –The Steinhatchee Fisheries Management Area in the Gulf of Mexico is the nation's first large scale habitat management project to conserve an overfished marine ecosystem.Research results identifying previously unknown interactions between fish behavior, reproduction and marine habitat are being used by NOAA to more accurately assess stocks of important fish, such as grouper. Quantitative information is critical to the long-term management of the state's $5 billion coastal marine fishery.

Transporting ornamental fish – IFAS studies documented the effectiveness of various drugs for protecting ornamental fish during transport from aquaculture facilities to retail stores.This research provides important support for FDA-approved drugs to be used by Florida's ornamental fish industry, which produces more than 95% of the ornamental fish sold in the U.S., an industry worth more than $45 million a year.

How river flow affects fish – IFAS scientists are conducting research in the Florida Panhandle to identify how reduced flow in coastal rivers affects the growth, reproduction and survival of sturgeon and other fish. This provides a scientific basis for maintaining particular dry season flows in Florida coastal rivers and has become critical in the ongoing water disputes between Florida and neighboring states, including Georgia.

Addressing fishery collapse – Collapse of a fishery can cause substantial economic and ecological harm.A common approach to prevent overfishing is establishing minimum-length limits.IFAS researchers explored the efficacy of these minimum-length limits and found high mortality of undersized fish once returned to the water.Reduced fishing must be incorporated as a management practice to help revive a struggling fishery.

Ecosystems and wildlife

Restoring barrier islands after hurricanes – An IFAS study developed methods for restoring barrier islands following hurricanes Ivan, Dennis and Katrina in the Panhandle.This study discovered that multiple species and multiple layers of dunes were important for infrastructure protection.These results have guided the millions of dollars of dune restoration by Eglin AFB and other federal, state and county agencies along the Gulf Coast.

Fate of phosphorus in wetlands – Researchers studying the biogeochemical cycling of nutrients in wetlands and aquatic systems have discovered the fate and transport of phosphorus.State agencies now use this information in restoration programs and environmental regulation.

Aquatic birds and heavy metals – Breeding of aquatic birds may be significantly reduced by much lower levels of mercury than previously thought.This research is critical for estimating the impact of mercury emissions on populations of wetland birds and in establishing heavy metal emission guidelines.

Florida black bears at the interface – As Florida becomes more urban, humans increasingly come in contact with wildlife, sometimes creating conflict.Human-bear conflicts lead to programs for nuisance bear management, and IFAS research has succeeded in demonstrating the benefits of using translocation of nuisance bears as a management tool.These results have helped shape the Florida Fish and Wildlife Conservation Commission’s guidelines to minimize impacts of bears on the public.

Environmental attitudes and behaviors – Sustainable use of energy and natural resources in Florida is strongly shaped by homeowner behavior.An IFAS study assessed environmental knowledge, attitudes about conservation, and conservation behavior. This work has shaped domestic and international policies and strategies to encourage environmentally responsible behavior.

Conservation of endangered snail kites –In North America, snail kites occur only in Florida and are recognized as endangered by the federal government. IFAS research documented a sharp decline in snail kite in recent years and a high probability of local extinctions. Researchers’ findings are contributing to the formulation of wetland conservation and management strategies for state and federal agencies in south Florida.

Agriculture and the environment

Less fertilizer for grazing lands – Bahiagrass is Florida’s most abundant crop, with approximately 2.5 million acres in production.Historically, its cultivation used annual inputs of nitrogen, phosphorus, and potassium. As phosphorus has become an environmental concern, nutrient requirements for healthy pastures have been refined.New Extension recommendations reduce acreage receiving annual phosphorus applications by an estimated 80%, meaning increased economic and environmental sustainability for Florida’s grazing lands.

Protecting South Florida’s "liquid heart" – In response to a steady decline in one of the nation’s largest freshwater lakes, IFAS has partnered with state and federal agencies to protect Lake Okeechobee. Researchers discovered ways to reduce the phosphorus entering the lake, reducing the cost of residue removal, estimated at $3,213 per acre.

Total Actual Amount of professional FTEs/SYs for this State

Year:2007	Extension		Research	
	1862	1890	1862	1890
Plan	32.0	8.0	67.0	0.0
Actual	467.3	8.0	252.4	0.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- Expert Peer Review

2. Brief Explanation

Merit review was completed at the end of the reporting period.by a group of peer faculty selected by program leaders from existing focus teams. Each participant was assigned four focus areas to review (of 27 possible focus teams). Focus teams were assigned from goal areas participants did not represent. This gave reviewers with a strong background in the function of the focus teams on which they served an opportunity to see what other focus areas had developed as logic models and a better understanding of the entire long range planning process and the development of extension programs.

Each participant reviewed four focus teams other than they ones they represented. Each participant received a copy of the logistic model for each focus area they were assigned to review along with access to an online Likert scale for analysis. Faculty also had the opportunity to provide narrative remarks. Reviewers could accept, accept with minor or major corrections or reject the existing logic model. Focus teams then received a copy of results from the merit review to use when they did their personal team reviews. Results are kept in the Program Development and Evaluation Center.

One reviewer who took part in the process said, "Our team found the Merit Review process helpful. It allowed us to come together with greater focus on certain issues as a team. it also helped us to realize some needs we had in terms of evaluation."

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public
- Survey of selected individuals from the general public

Brief Explanation

Florida UF and FAMU Extension and UF research do a long range plan which reaches the grassroots level. Stakeholders are invited to attend and provide information at This process is clearly identified in the POW. Special care was taken to obtain feedback from representatives of the under served and under represented. Because of the present crisis in Florida additional feedback has been obtained from county government and other stakeholders to identify any emerging trends or changing critical needs.

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief Explanation

Critical area Focus teams, county faculty and advisory committees across the state help to identify individuals and groups for stakeholder inputs.On top of this announcements in multi-media provide information on dates and times for discussion. Websites for both Extension and Research provide information on how to reach offices where additional comments can be provided.Focus teams which function in specific critical need areas are in contact with stakeholders year round and individuals and grouops are freqently identified. These focus teams composed of state and county faculty from both UF and FAMU are critical for monitoring across the state for individuals and groups who may represent changing issues and emerging issues.

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public

Brief Explanation

Florida Extension and research use listening sessions. They also attend many of the traditional and non-traditional conferences and organizational meetings across the state. They work directly with county commissioners and in 2007 obtained a list of county commission goals. This was done because of the looming budget crisis and changing state laws and regulations that could affect critical needs. Faculty across the state meet with multiple advisory committees in each county. Each year this information is provided to the Extension Goal and Focus teams and to the Research dean's office and is used to adjust both research needs and Extension programming.

3. A statement of how the input was considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

Brief Explanation

Research uses the information as the basis for searching for grants and developing and implementing critcal issue research.Florida is a major entry point for foreign markets and visitors. Florida must especially be vigillante for emerging issues as it has been estimated by the Florida Department of Agriculture that each month at least one new disease, pest or pathegon is introduced into Florida;

Extension has a series of six goal areas based on critical needs identified in Florida. Each goal has been further divided into three to five focus teams. These teams are responsible for developing state-wide Extension programs. These teams meet several times per year to review changing or emerging needs and make necessary changes to the program plans that reflect these needs.

Brief Explanation of what you learned from your Stakeholders

{NO DATA ENTERED}

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
4236251	1483608	5396225	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	4231048	1483708	5396222	0
Actual Matching	35476315	1483708	5426343	0
Actual All Other	40883995	501146	46850319	0
Total Actual Expended	80591358	3468562	57672884	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous years				
Carryover	0	0	39657	0

V. Planned Program Table of Content

Program #1

V(A). Planned Program (Summary)

1. Name of the Planned Program

Enhance and Maintain Agricultural and Food Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
104	Protect Soil from Harmful Effects of Natural Elements	10%	10%	10%	
111	Conservation and Efficient Use of Water	10%	10%	10%	
132	Weather and Climate	10%	10%	10%	
133	Pollution Prevention and Mitigation	10%	10%	10%	
136	Conservation of Biological Diversity	5%	10%	10%	
141	Air Resource Protection and Management	10%	10%	10%	
201	Plant Genome, Genetics, and Genetic Mechanisms	5%	0%	10%	
204	Plant Product Quality and Utility (Preharvest)	10%	10%	10%	
205	Plant Management Systems	10%	10%	10%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%	10%	10%	
307	Animal Management Systems	10%	10%	0%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	98.0	3.0	0.0	0.0
Actual	169.0	14.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1531150	899166	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
12838324	899166	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
14795278	200046	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Advisory Council93Classroom Enrichment94Clinics56Consultations356County Event68Curriculum Development22Demonstration/Fields Trials242Developing Educational Materials169Developing Partnerships and Collaborations114District Event18Facilitating Groups62Fairs/Exhibits59Field Days119Funding Efforts21Group Teaching Events778In-Service Training112Marketing21Needs Assessment25Program Development90Reporting Results16State/National Event109Video Conference16Working With Media34
Total activities for 2007 were 2694

2. Brief description of the target audience

Target audiences included Business and Industry, Florida residents, government and regulatory agnecies, non-governmental organizations, and university faculty and staff.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	381678	29038877	0	0
2007	396970	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	733	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Field trials classroom enrichment

Year	Target	Actual
2007	30	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Accurate use of enterprise budgets and analysis Adoption of alternative enterprises for increased profit or improved sustainability Adoption of appropriate fertility programs Adoption of appropriate varieties/breeds/cultivars/rootstock Adoption of efficient irrigation systems and technologies Attainment of advanced certification and/or license Correct identification of pests and proper use of control strategies Greater understanding and compliance with laws and regulations Greater understanding of domestic and international competition, markets, and policies Implementation of integrated pest management strategies Implementation of sustainable rotation systems Improved economic efficiency Improved management of animal health and welfare Improved processing systems for agricultural products Improved waste management practices Improved water management Greater appreciation for the goods and services from agriculture and natural resources Greater political support for agriculture and natural resources Increased awareness of economic impacts of agriculture and natural resources Increased awareness of environmental impacts of agriculture and natural resources Increased communication and interaction with stakeholders Increased consumer confidence in Florida's agricultural products Increased public awareness of environmental stewardship practices by agricultural and natural resource entities
2	Improve procedures and techniques to increase revenue from agricultural practices
3	improved delivery of extension programs
4	Improve Agricultural and Environmental knowledge/skills
5	Improve compliance with local state and federal regulations
6	Improved delivery of Extension programs in the area of Small Farms
7	Improving procedures and techniques for distributing agricultural products
8	FAMU-improved procedures and techniques to increase revenue from agricultural practices
9	FAMU-Improved procedures and techniques for distributing agricultral products
10	FAMU-Improve skills in animal science

Outcome #1

1. Outcome Measures

Accurate use of enterprise budgets and analysis Adoption of alternative enterprises for increased profit or improved sustainability Adoption of appropriate fertility programs Adoption of appropriate varieties/breeds/cultivars/rootstock Adoption of efficient irrigation systems and technologies Attainment of advanced certification and/or license Correct identification of pests and proper use of control strategies Greater understanding and compliance with laws and regulations Greater understanding of domestic and international competition, markets, and policies Implementation of integrated pest management strategies Implementation of sustainable rotation systems Improved economic efficiency Improved management of animal health and welfare Improved processing systems for agricultural products Improved waste management practices Improved water management Greater appreciation for the goods and services from agriculture and natural resources Greater political support for agriculture and natural resources Increased awareness of economic impacts of agriculture and natural resources Increased awareness of environmental impacts of agriculture and natural resources Increased communication and interaction with stakeholders Increased consumer confidence in Florida's agricultural products Increased public awareness of environmental stewardship practices by agricultural and natural resource entities

2. Associated Institution Types

{No Data Entered}

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	6	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	

Outcome #2

1. Outcome Measures

Improve procedures and techniques to increase revenue from agricultural practices

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	2463

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Agriculture has the highest economic impact in Florida next to tourism. Increases in revenue are important the financial health of the entire state.

What has been done

Awareness in the areas of many commodities and the use of BMPs and new cultivars are improving crop production.

Results

Florida's commercial blueberry industy continues to increase in acreage more than doubling from 2000 to 2007. Yield per acre increased from 1,400 to 3,000 pounds during this time because of new cultivars now in production 90% of which were producted by University of Florida breeding programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
141	Air Resource Protection and Management
136	Conservation of Biological Diversity
204	Plant Product Quality and Utility (Preharvest)
201	Plant Genome, Genetics, and Genetic Mechanisms
133	Pollution Prevention and Mitigation
111	Conservation and Efficient Use of Water
132	Weather and Climate
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
104	Protect Soil from Harmful Effects of Natural Elements

Outcome #3

1. Outcome Measures
improved delivery of extension programs

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	19052

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Citrus growers, production managers, field workers and industry personnel

What has been done

Held citrus Canker and greening education programs at major citrus events including the Citrus Expo, Indian River Citrus Seminar and the Florida Ag Expo as well as individual grower consultations that reached approximately 5,000 growers, production managers, field workers and industry personnel in both Spanish and English

Results

As a result of these programs and clientele contacts, the citrus industry is more aware of the two diseases, their spread and control and the threat they pose to the citrus industry.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #4

1. Outcome Measures

Improve Agricultural and Environmental knowledge/skills

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	6148

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The economic competitiveness of the livestock industry is impacted by the generation of hay production. Hay production includes rising fixed input costs of fuel,labor costs, fertilizer and feedstuff production for livestock.

What has been done

The important Extension education programs in the area of livestock and forage production work to educate agricultural enterprise participants who are responsible for producing wholesome, safe, and economical food, forage, and livestock for the citizens of Florida and down-stream consumers of Florida produced products.

Results

In 2006 hay sales generated $60 million dollars in revenue within the state directly impacting the livestock product sales of $1.5 billion and equine product value of $2.2 billion.

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
141	Air Resource Protection and Management
132	Weather and Climate
201	Plant Genome, Genetics, and Genetic Mechanisms
211	Insects, Mites, and Other Arthropods Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
111	Conservation and Efficient Use of Water
104	Protect Soil from Harmful Effects of Natural Elements
205	Plant Management Systems
133	Pollution Prevention and Mitigation

Outcome #5

1. Outcome Measures

Improve compliance with local state and federal regulations

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	6738

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Industry representatives, congressional and state representatives were introduced to clam farming as was the general public. This is important because both land and sea farm resources are increasingly jeopardized by irreversible urban sprawl throughout major areas of the state. Making Florida residents more aware of the many benefits of agriculture and natural resource industries is necessary to increase consumer knowledge and appreciation as well as the need for regulatory protection of this important industry.

What has been done

Faculty cohosted with industry representatives several educational venues in which congressional and state delegates and their aides were introduced to clam farming. These interactions will allow for more informed and balanced policy decisions affecting shellfish aquaculture and coastal resources. Through festivals, fairs and special events the general public also had the opportunity to learn more about shellfish aquaculture and coastal resources that have high economic value to the Florida economy.

Results

Several multistate programs as well as Florida educational programs reached a total of 230,000 people with awareness messages. In sparsely populated Santa Rosa county alone 276 local citizens and government officials participated in the 41st Annual County Farm Tour. Post tour evaluation showed that 98% of participants increased knowledge of the scope and impact of agriculture and forestry in Santa Rosa while 100% rated the educational information and demonstrations provided as good to excellent.

4. Associated Knowledge Areas

KA Code	Knowledge Area
141	Air Resource Protection and Management
133	Pollution Prevention and Mitigation
111	Conservation and Efficient Use of Water
205	Plant Management Systems
132	Weather and Climate
204	Plant Product Quality and Utility (Preharvest)

Outcome #6

1. Outcome Measures

Improved delivery of Extension programs in the area of Small Farms

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	2463

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small farms of 5 to 20 acres has become a trend in Florida leading to a need for Extension agents to find ways to meet the needs of these small farms and at the same time continue to serve traditional agriculture in Florida.

What has been done

Extension agents throughout Florida have increased their knowledge of Small farms and alternative enterprises through participation in IST events such as study tour, regional conferences, marketing training (Seffner), symposium training, and web site participation. 80 county faculty participated in trainings. As a result, county faculty initiated 20 educational programs with over 2000 attendees. In addition, the SF website received 640,000 hits and 103,267 sessions.
Small Farms Focus team members continued to solicit and add presentations to the IFAS Presentations web site. A total of 37 presentations under the Small Farms sections are now available for other faculty to use in their educational programs statewide. During 2007, these presentations were downloaded 617 times. 22 faculty contributed to these presentations.
The Virtual Field Day Site (http://vfd.ifas.ufl.edu) created an opportunity for statewide and national exposure for the Small Farms focus team. The site received over 5000 hits monthly. IFAS administration requested a presentation of the site to the admin team. The site was one of three examples of innovative distance education projects nationally presented at the National ESP conference. The site was also one of three IFAS sites presented at the UF IT Open House hosted by President Machen. The expansion of the site is continuing with the addition of new modules including: Greenhouse IPM, Drip Irrigation for Small Farmers, Stone Fruit IPM, Pastured Poultry Production, and Organic Production.

Results

A major effort of the Extension focus team was to plan and initiate regional small farm conferences. This series of conferences was begun in 2006 at about a dozen locations in Florida. The type of conference delivery methods varied from meetings, field days, workshops, and combinations of methods. These conferences have been very popular with over 1700 attendees in these 'regional' conferences in 2007. In addition to these regional conferences, many county programs have also been delivered to an even larger group of attendees. These programs have generally been targeted at an introductory level, introducing various enterprises, market options, etc.
As the regional programs evolved, the evaluations have shown the growers appreciate the value of these meetings; however, they also clearly identify the need to get additional information at the 'next level'. The future needs small farmers have identified include:
* The need for detailed information for intermediate and experienced growers.
* Help understanding regulatory issues of processing, valueadded
products, liability,
insurance, etc.
* Learn how to indentify appropriate markets, price products, and sell.
* Develop an infrastructure to formally organize the industry of small farmers.
* Develop local small farms networks to facilitate farmertofarmer communication.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
141	Air Resource Protection and Management
111	Conservation and Efficient Use of Water
204	Plant Product Quality and Utility (Preharvest)
136	Conservation of Biological Diversity
133	Pollution Prevention and Mitigation
132	Weather and Climate

211	Insects, Mites, and Other Arthropods Affecting Plants
201	Plant Genome, Genetics, and Genetic Mechanisms
104	Protect Soil from Harmful Effects of Natural Elements

Outcome #7

1. Outcome Measures

Improving procedures and techniques for distributing agricultural products

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Food processing, service, preparation and distribution are all vital activities that support he people of Florida and the state's agricultural industry. Effective distribution systems enhance the state's ability to compete effectively in the domestic and global marketplace. Food safety and security are critical components of a sustainable industry.These issues surrounding safety and security span the entire food sector raning from consumers to the food service and processing industry and all people working in these areas. Proper food safety and security also directly impact the health of those who use these products. The need for accurate, easy to understand and accessible information is paramount to the succes of the entire industry and the health and welfare of the entire population.

What has been done

More than 100 educational programs were conducted reaching an audience of approximately 5,000 people on processing, distribution, safety and security of food systems. Food processing, service, preparation, and distribution are all vital activities that support the people of Florida and the state's agricultural industry.

Results

One of the main success stories for G1F3 the strides made in implementing of mandatory Good Agriculture Practices (GAPs). Florida has the first mandated food safety requirements for fruits and vegetables in the country with the cooperative program for tomatoes being adopted by FDACS, and the first few years in particular will require many devoted hours for extension, education and training as well as the development of specific food safety materials based on the good agricultural practices. Progress has been made with similar adoptions of GAPs and Best Management Practices (BMPs) by the leafy greens industry as well as beginning discussions with strawberry, melons and blueberries.

The adopted Tomato Good Agricultural Practices (T-GAP) program for growers and greenhouses and Tomato Best Management Practices (T-BMP) program for packinghouses mandate annual education and training for all levels including workers, growers, and greenhouses to be provided by the University of Florida. This training includes on the ground, hands on training in the requirements of food safety practices in the field including employee hygiene, previous land use, animal and pest control, water sources, environmental risks, and sanitation of tools, equipment and containers. As a result of these educational programs there has been an increase in safer harvesting practices, improved processing practices, and improved safety and security.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #8

1. Outcome Measures

FAMU-improved procedures and techniques to increase revenue from agricultural practices

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	2463

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Improving the Profitability of Small-Scale Cropping Systems in Florida. (Alternative crop enterprise to improve the livelihood of small-scale minority farmers)-1890

What has been done

The Florida A&M University Cooperative Extension Small Farm Program identified several alternative enterprises for use by its small farm clientele interested in diversifying their farming operation. This program includes incorporating effective crop management to improve profitability. Introduction of alternative market outlets through various marketing channels including school districts throughout the southern region.

Results

One successful alternative crop was hot peppers which successfully improved 25 farmers income by $2,500 per acre. This crop continues to have value-added significance in improving the livelihood and income of small farmers especially in North and Northwest Florida.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #9

1. Outcome Measures

FAMU-Improved procedures and techniques for distributing agricultral products

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Disaster and Emergency Preparedness for Small Ruminant Producers

What has been done

A disaster emergency small ruminant program was initiated by Florida A&M University Cooperative Extension Program in North Florida to provide information to small live-stock producers and the public that would allow them to be aware of how to plan, recognize, respond, recover, prevent and reduce the potential impacts of various disasters and emergencies during hurricane season.

Results

Protecting animals during a hurricane and other disaster emergency periods was significant in fiscal year 2007 for more than 50 small farmers engaged in the production of sheep and meat goats. The most significant aspect of this program provided knowledge on the need for good record keeping inclusive of an animal and premise identification system as well as photographs of animals to prove ownership was one of the highlights of this particular program. This program will continue in the future to assist farmers and farm families with the proper identification and care of small ruminant animals during natural disaster periods.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #10

1. Outcome Measures

FAMU-Improve skills in animal science

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	661

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small Animal and Small Farm Profitability and Sustainability. Meat-goat production, management, and marketing continue to drive Florida A&M University Research and Extension Programs through its Small Animal Meat-Goat Program. Significant production information continues to be requested by small farmers and other enthusiast throughout the world.

What has been done

Improved genetics and quality through conducting a Master Goat Certification Program proved significant in enhancing the knowledge base of 30 participants in a five day training program to be certified as 'Master Goat Producers.

Results

The results of the program show that several goat producers have adopted at least 5 or more sustainable production practices. The practices include: establishing an on farm bio-security program, using a record keeping system, developing a breeding, nutrition and herd health programs, using the FAMACHA system and rotational grazing. Due to its success, the program will be offered three to four times per year throughout the state.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

Florida has been under a serious economic crisis for almost 8 months. Although to this point Extension programs have been inmost cases able to function, the amount of stress and strain affecting state faculty is evident. Appropriation changes have required pay backs of state funding that are expected to increase and continue through 2009. Problems leading to the the crisis include the mortgage crisis, recession, and a reduction in tourism due to increased gas prices.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

In the Enhance and Maintain Agricultural and Food Systems program area there were more than 2694 activities completed in 2007 to provide solutions to critical needs in this program area. Faculty and staff expended 205617.6 hours on these programs.As a result, Extension faculty had more than396970 direct clientele contacts. In activities within these programs more than 289445 activity attendees were evaluated and more than 287241 participants showed a knowledge, behavior or conditional change as outcomes to the research-based educational program(s) they attended.Over $29164752 dollars were expended in the 1862 portion of this program while FAMU used $1998378 from state, county and federal sources. This program included both integrated and multistate components. More than 6944 hours were expended by volunteers in this program area at a value of $ 111,451.20. Some program highlights in this program area include the following:

Florida works hard to provide programs that help to enhance and maintain agricultural, natural resoures, and food systems in the state of Florida. Although there are many crops and agricultural products and commodities that lead to agricultural being the second highest economic indicator in the state the most important commodities are agronomic row crops, animal science and forages, aquaculture, citrus, forestry, fruits and vegetables, ornamentals and turf, small farms and alternative enterprises, sugarcane, rice and the newest commodity bioenergy.

Results in all of these areas show that although land mass in agriculture is decreasing in many areas, Extension and research have worked hand in hand to produce and educate growers and producers in the uses of new cultivars that provide higher levels of production.

Several workshops were conducted targeting the tomato industry, most notable the Tomato Roundup (Naples, FL) as well as two GAPs workshops (Balm, FL).Approximately 90% of the industry attended at least one of these meetings.The next step is to address the small growers who historically don't attend the educational meetings. The GAPs program utilizes the cooperative efforts of Horticulture (Sargent, Brecht), Plant Pathology (Bartz), FYCS (Simonne) and Food Science and Human Nutrition (Schneider).

Juice HACCP still remains a critical need to Florida's citrus juice producers and marketers.All juice processed in the US must be processed under HACCP conditions.The juice HACCP program provided by Department of Food Science and Human Nutrition (Goodrich Schneider), continues to be the major resource for this training. Three training workshops were conducted in 2007, with one taught in Canada, as requested by Coke North America.

Key Items of Evaluation

The university of Florida research and Extension continue to work closely together to produce new tropical cultuivars for Florida produce that leads to larger yields. Blueberries is only one example. Since 2003 yield per acre has increased from 1,400 to 3,000 lbs. in 2007. The industries value is estimated at about $39 million for 2007, an increase of over $6 million from the previous year. Over 90% of the commercial blueberrry acreage in Florida is composed of cultivars developed by the University of Florida breeding program.

Giving policy makers needed tools – Integration of digital database libraries with local governments and industry allows better decision making, policy changes and lighter footprints on the environment. IFAS research and extension developed a web-based system that provides climate forecast information to help agricultural and forest managers make better decisions.

BMPs for Ag – IFAS research and extension programs lead the nation in the development of agricultural nutrient best management practices (BMPs).Several sectors of Florida agriculture either plan to implement, or have implemented, such practices, including dairy, poultry and row crop growers.For row crops alone, this means a potential reduction in nitrogen application between 20 and 30 percent, leading to reduced groundwater contamination and more profitable crops.

Managing weather risk – IFAS research and extension faculty are developing climate and weather technologies to manage agriculture risk and improve irrigation efficiency.The ability to accurately predict freezing temperatures can save millions for growers by allowing them adequate time to protect the crops. According to data from trade associations and Florida Agricultural Statistics Service, citrus, strawberry, fern, ornamental plant, and vegetable producers "save" about 18 billion gallons of water and $9.3 million a year by using IFAS cold protection management tools.

Saving water, using fewer chemicals – IFAS scientists are developing high-tech instrumentation to help farmers save water and pesticides. For example, IFAS scientists have developed new irrigation sensors that can control irrigation frequency, saving more than 60 percent of the water traditionally used on tropical fruit and ornamental plants.Reductions in pesticides are realized by IFAS technology that stops spraying at the point of a missing plant or tree.

Over 16,000 served – Since 2006, more than 16,000 people have participated in pesticide safety training programs, worker protection programs, certification, and Continuing Education classes.

Efforts in Commercial Seafood Production & Safety in Franklin County have lead to the development and Food & Drug Administration certification/approval of three oyster post-harvest processing methodologies as allowed three oyster processors in Florida to sell a new safer product form to consumers.Additionally as a result of the First Annual Oyster School (Otwell), 21 seafood buyers representing 16 major national wholesale/retail seafood distributors were educated about oyster safety issues, post harvest processing methodologies and best handling practices to maximize oyster quality & safety.

Program #2

V(A). Planned Program (Summary)

1. Name of the Planned Program

Maintain and Enhance Florida's Environment

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%	10%	10%	
103	Management of Saline and Sodic Soils and Salinity	10%	10%	10%	
104	Protect Soil from Harmful Effects of Natural Elements	10%	10%	10%	
111	Conservation and Efficient Use of Water	10%	10%	10%	
112	Watershed Protection and Management	10%	10%	10%	
131	Alternative Uses of Land	10%	10%	10%	
132	Weather and Climate	10%	10%	10%	
133	Pollution Prevention and Mitigation	10%	10%	10%	
134	Outdoor Recreation	10%	10%	10%	
135	Aquatic and Terrestrial Wildlife	10%	10%	10%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	32.9	1.0	0.0	0.0
Actual	47.0	2.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
425823	106820	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
3570421	106820	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
4114664	101000	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Classroom Enrichment49Clinics112Consultations68County Event28Curriculum Development17Demonstration/Fields Trials38Developing Educational Materials46Developing Partnerships and Collaborations81District Event5Facilitating Groups37Fairs/Exhibits29Field Days38Funding Efforts3Group Teaching Events291In-Service Training74Marketing3Needs Assessment6Program Development49Reporting Results9State/National Event18Video Conference1Working With Media14
Total activities for 2007 were 1058

2. Brief description of the target audience

•Recreational fishing sector •Fishing tournament organizers •Adult participants in fishing tournaments •Youth participants in fishing tournaments •Charter boat operators •Fishing guides •Bait and tackle shop retailers •Fishing clubs •Recreational fishers •Boating sector •Navigational districts •Port authorities •Marina operators •Boatyard operators •Eco-tourism providers •Boat and boat supply retailers •Boating groups •Recreational boaters •Recreational hunting sector •Hunting guides •Hunting shop operators •Hunting clubs •Land owners managing for hunting •Recreational hunters •Non-consumptive recreation sector •Hiking clubs •Hikers •Wildlife and birdwatching groups •Wildlife and bird observers •Dive clubs •Divers •Land owners, users and developers •Rural, suburban and urban single family owners •Suburban and urban multi-family owners •Rural, suburban and urban renters •Agricultural producers •Rural ranchette owners •Lakeshore residents •Private pond owners •Homeowner associations •Developers •Landscape designers and contractors •Environmental consultants •Natural resource policy makers •Florida Bar Association •Municipal planners •County planners •Regional planners within the state •State planners •Municipal elected and appointed officials •County elected and appointed officials •State elected and appointed officials •Federal elected and appointed officials •Natural resource managers and regulators •Municipal managers •County managers •Regional managers within the state •State managers •Multi-state regional managers •Place-based management partnerships •Federal managers •International managers •Private property managers •Opinion leaders •Non-governmental organizations •Master Gardeners •Environmental groups •Wildlife and bird observing groups •Conservation groups •Other community groups •Educators and trainers •K-5 teachers •6-8 teachers •9-12 teachers •College faculty and other researchers •4-H leaders •Extension faculty •Interpreters •Other non-formal educators •Youth •K-5 students •6-8 students •9-12 students •College students •4-H participants •Other youth groups •Other segments of the public •Underrepresented groups •Interested public •Volunteers for cleanups •Volunteer monitors •Volunteer restorers •Other volunteers •Seasonal residents and tourists

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	70799	18592588	0	0
2007	222660	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	208	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Field trials classroom enrichment

Year	Target	Actual
2007	30	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Field trials classroom enrichment
2	Improved management systems, procedures, and/or techniques to improve water conservation
3	Improve agricultural and environmental knowledge/skills
4	Improve procedures and techniques to deliver environmental education
5	Develop skills required for effective critical thinking problem solving and decision making
6	Improve compliance with local, state and federal regulations
7	FAMU-Improved management systems, procedures and/or techniques to maintain or improve water quality

Outcome #1

1. Outcome Measures

Field trials classroom enrichment

2. Associated Institution Types

{No Data Entered}

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	

Outcome #2

1. Outcome Measures

Improved management systems, procedures, and/or techniques to improve water conservation

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	595

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Florida Dept. of Agriculture and Consumer Services (FDACS) has approved more that a dozen Best Management Practice (BMP) programs to be implemented by Florida's agricultural producers in order to protect water resources and meet total maximum daily loads (TMDL) as established by the Florida Dept. of Environmental Protection. A major hurdle that must be overcome in order to accomplish the enrollment goal of 80% participation statewide is BMP education for producers. The water resource extension arm of UF-IFAS is uniquely positioned to provide this education. The target audience is Florida's commercial agricultural and horticultural producers

What has been done

After the need for a Beat Management Practice (BMP) manual is identified, UF-IFAS water resource extension join the steering committee and technical work groups, which comprise state agency personnel, producers, and other clientele groups. After a draft manual is produced, it is reviewed multiple times, and the final version is adopted into code by FDACS. After manuals are distributed to producers, the education and implementation process led by UF-IFAS commences.

Results

Citrus BMP Implementation
Citrus growers implementing the BMP program have decreased their total use of pesticides and fertilizers by using FDACS cost-share funds to install variable-rate application equipment. For example, one grower reduced a soil-applied nematacide application to a 249-acre grove from 6,119 lbs to 4,612 lbs, saving 1,507 lbs of pesticide not applied. Another grower reduced pesticide sprays by 25% in a grove with numerous re-planted trees. One large citrus grower using a variable-rate fertilizer applicator decreased the total amount of fertilizer applied by 23%, while another grower applied 54% less fertilizer as a result of variable-rate application.

South Miami-Dade County BMP Implementation
The south Dade BMP implementation team visited more than 30 farms comprising 38,500 acres of crop land, assessed 32,800 acres for BMP implementation, and assisted growers in signing up for the BMP program via the official NOI (notice of intent) for 6,000 acres. The team estimated the growers who are following BMPs will save at least 40% water consumption and 20% fertilizer usage. BMP implementation resulted in savings of at least 720,000 gallons of water, 36,000 lbs of N fertilizer, and 24,000 lbs of P fertilizer, and consequently lowered production costs and improved the south Florida environment.

BMP Education for Certified Crop Advisers
There are more than 200 Certified Crop Advisers (CCAs) in Florida, including private consultants, technical representatives, sales people, producers, and extension agents) with the common goal of advising and educating Florida's agricultural and horticultural producers about production practices that both maintain profitability and protect the environment. More than 100 CCAs attended two Water Resource Focus Team-sponsored workshops to provide required continuing education units. Pre and post-test scores indicated an average knowledge gain of 10 to 15% resulting from this educational effort.

BMP Education for Florida's County Extension Agents
The Water Resources Focus Team sponsored and conducted three in-service training sessions that taught county agents about BMPs: 'Nutrient/Water Quality - Land Use Information Tools,' 'Agricultural and Urban Stormwater Management,' and 'Whether You Like It or Not! Tools for Success in the BMP Era.' These sessions were attended by a total of 61 agents. Self-evaluations indicated that agents gained new knowledge of BMPs and water quality issues. Pre/post-tests measured an average knowledge gain of 30%.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
103	Management of Saline and Sodic Soils and Salinity
112	Watershed Protection and Management

Outcome #3

1. Outcome Measures

Improve agricultural and environmental knowledge/skills

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	16614

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many invasive species have become a nuisance in Florida. An invasive species is defined as a plant, animal or microbe that is found outside of its native range, where it negatively impacts the ecology, economy, or quality of human life. The Cuban Tree Frog (Osteopilus septentrionalis) is one of them. Native to Cuba, it has established residence in Florida. In both natural and urbanized settings, Cuban Tree Frogs are known to be predators of Florida's native tree frogs. They also are known to eat several additional species of native frogs, lizards, and many types of invertebrates. They are known to get into transformer boxes and electrical switches and occasionally cause short-circuits. This increases maintenance costs for electrical utility companies, and power to some customers in central Florida has been interrupted as a result of short-circuits in 'disconnect switches' caused by Cuban Tree Frogs. Target audience is utility managers and homeowners

What has been done

Educational programs and informational materials were developed on the Cuban Tree Frog. These activities included 3 educational events, development of several power point presentations, posters, and materials posted on the University of Florida website as well as a publication The Cuban Tree Frog (Osteopilus septentrionalis) in Florida (http://edis.ifas.ufl.edu/UW259). During the workshops and other events, there was discussion on Cuban tree frog habitats and behavior, and how landowners and utility managers can eradicate or reduce their impact in their local areas.

Results

More than 388 individuals attended local seminars and workshops, and more than 250 landowners and utility workers indicated they were developing some management plans to deal with the Cuban tree Frog issue. In addition to these direct contacts, news stories on this invasive frog appeared in such local, state, national and international publications as the Gainesville Sun, the Discovery Channel, Physorg.Com (Science news site), Energy Industry Today (Bahamas News), and Inside IFAS. Also, a news story and interview with the extension specialist was run on 'The Florida Environment' that is broadcast on 11 radio stations across Florida. Information on the Cuban Tree Frog can also be found on the University of Florida IFAS Extension website: (http://solutionsforyourlife.ufl.edu). Finally, more than 187.5 acres were covered by new management plans and controls for prevention and eradication of the Cuban Tree frog.

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife

Outcome #4

1. Outcome Measures

Improve procedures and techniques to deliver environmental education

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	2127

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

During previous Extension planning and listening sessions, county faculty expressed an interest in additional programs, curricula and materials in environmental education (EE) and evaluation methods. In-service trainings have been held for extension faculty, although limited EE training opportunities have been available for volunteers, leaders, program assistants and camp staff. A basic concept in volunteer leadership and management is to provide training and learning opportunities to volunteers. The target audience is 4-H agents, leaders, program assistants, volunteers and 4-H camp staff.

What has been done

The Florida 4-H Program provides numerous opportunities for youth ages 5-18 to participate in environmental education activities. These activities are conducted through several delivery modes including the traditional 4-H club, after school programs, school enrichment activities, day camps, residential camps and special events. The activities and events are supported by numerous curricular projects/activity guides in environmental education that are made available to 4-H staff, volunteers and teachers throughout Florida. Some titles for these support materials include: Earth Connections, Aquatic Marine Ecosystems, Soil, Water and Land Use I and II, and Recycling Adventures. In addition to these Florida specific curricula, nationally distributed activity guides are also utilized including Project Learning Tree, Project Wet, and Project Wild. In most situations, these curriculum/project activity guides are presented to agents and volunteers through training programs. The training, which can be anywhere from 2-8 hours in duration, provides background for the leader to then begin implementation of the activities in their community situation. The most recent statistical report provided by Florida 4-H for 2006-07 (updated Jan. 30, 2008) indicates that 33,027 youth were involved in projects for the category environmental education and earth science. (A project in 4-H is defined as a minimum of six (6) hours of youth involvement in a particular area.) The sub-categories recognized are Earth Water and Air, Weather and Climate, Soils and Soil Conservation, Energy, Forests, Rangeland and Wildlife, Forestry, Wildlife and Fisheries, Outdoor Education, Adventure Challenge, Shooting Sports, Waste Management, Composting and Recycling. Many of these sub categories are supported not only with curricular materials but also by state and national events such as Forest Ecology, Marine Ecology, Land Judging, and Wildlife Habitat Evaluation. These events provide opportunities for youth to compete for scholarships and recognition within the categories.

Results

The impact of all these activities and events conducted through 4-H is difficult to assess but an attempt has been made to establish a baseline in environmental literacy for Florida 4-H. The result of two studies (Culen and Mony, 2003) presents a view of the effectiveness of these types of environmental education programs in the development of environmentally responsible citizens. This study suggests that the environmental education program used in Florida 4-H can increase ecological knowledge of participants. The data also suggest that other variables (i.e., environmental issue awareness; knowledge and skill in the use of environmental action strategies; and evaluation of environmental issues) thought to be strong predictors of responsible citizenship behavior increased in the desired direction of achievement. It would appear, therefore, from these studies that there is an improvement in environmental literacy in the 4-H environmental education program as a result of the curricula used and/or the teaching methods employed.

Culen, G.R., and P. Mony, (2003). 'Assessing Environmental Literacy in a Nonformal Youth Program.' The Journal of Environmental Education, 34(4), pp. 26-28.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
111	Conservation and Efficient Use of Water
131	Alternative Uses of Land
135	Aquatic and Terrestrial Wildlife
103	Management of Saline and Sodic Soils and Salinity
102	Soil, Plant, Water, Nutrient Relationships

104	Protect Soil from Harmful Effects of Natural Elements
133	Pollution Prevention and Mitigation
132	Weather and Climate
134	Outdoor Recreation

Outcome #5

1. Outcome Measures

Develop skills required for effective critical thinking problem solving and decision making

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	271

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

During previous Extension planning and listening sessions, county faculty expressed an interest in additional programs, curricula and materials in environmental education (EE) and evaluation methods. In-service trainings have been held for extension faculty, although limited EE training opportunities have been available for volunteers, leaders, program assistants and camp staff. A basic concept in volunteer leadership and management is to provide training and learning opportunities to volunteers. Target audience is 4-H leaders, program assistants, volunteers and 4-H camp staff

What has been done

4-H Camp Staff participated in a Project Learning Tree Workshop at training in May 2007 at Camp Ocala. This Environmental Education workshop focused on hands-on activities from the Project Learning Tree Curriculum Guide. Camp staff participated in PLT activities at the fire ring at the camp. Camp staff put a tremendous effort into participating in the activities that were presented and discussion as to how to utilize the materials at camps. In addition to the PLT guides, the staff received various other EE materials about invasive species, black bears, Florida wildlife, water resources and more. Evaluations showed that the staff enjoyed the training, increased there knowledge of EE teaching techniques, planned to use PLT activities at summer camps and would like more of this type of training.

A diverse group (25) of 4-H volunteers, leaders and program assistants attended the EEI at Camp Cherry Lake. Many hands-on activities were provided throughout the two day period. Participants were instructed in field sampling techniques for water quality and aquatic insects, invertebrate and fish identification, kayak and canoeing skills, owl call identification, field trip safety and more. The participants were provided with a wide variety of curriculum materials such as Project Aquatic Wild, Project Learning Tree, Give Forest a Hand and Coastal & Marine Environmental Issues, miscellaneous EE materials from various agencies and groups, as well as a variety of field guides and equipment.

Results

Outcome: Evaluations indicated that 97% of the participants found the EEI to be useful to their clubs and programs; they enjoyed the hands-on activities and would like more training in environmental education. Some suggestions for future activities include: promote a workshop with youth/adult partnership in EE activities, offer more in-depth training on field equipment and activities and include more hands-on training for youth judging events. Remaining grant funds will be used for a youth/adult partnership program exploring EE issues in the Northwest District in 2008.

Impact: As a member of the EE Focus Team, Dr. Martha Monroe is active in reaching tomorrow's resource mangers through her youth education programs and leadership of Florida's Project Learning Tree program (PLT). Since 2003, volunteer facilitators have trained 3,700 PLT educators (K-12 teachers, extension agents and other professionals) in 155 workshops. They have also conducted 116 other activities with more than 29,000 citizens (mostly children)-educating them about the values of natural resources. Martha's evaluation of the PLT workshops suggests that 75% of those newly trained 3,700 educators will reach an additional 89,750 Florida Youth each year.

Impact: EE activities reported in the Unifas system reached 4130 clients of UF/IFAS Extension. Audiences include: adults, adult volunteers, youth, youth volunteers, administers of education, administrators of environmental quality, public administrators, county faculty and staff and state faculty and staff.

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
134	Outdoor Recreation
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
131	Alternative Uses of Land
133	Pollution Prevention and Mitigation
132	Weather and Climate

Outcome #6

1. Outcome Measures

Improve compliance with local, state and federal regulations

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	63

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The recreational fishing industry generates an economic impact of over $2 billion to the Florida economy. Approximately one million saltwater recreational fishing licenses are sold each year; 40 percent are non-resident licenses. The commercial fishing industry generates annual dockside sales of $200 million. Approximately 14,000 individuals; hold licenses to fish commercially; these individuals use approximately 8,000 craft in the harvesting sector.
The growing number of saltwater anglers and continued demand for high-quality seafood are placing increased pressure on Florida's marine fishery resource. Managers need to cope with these pressures with more effective management tools that allow for long-term sustainable resource use. Saltwater anglers and commercial fishers need new skills and techniques that reduce fish mortality and bycatch in their activities. Target audience is Recreational Anglers and Commercial Fishing Industry.

What has been done

The fisheries work action group provided leadership and educational programs concerning the use of release mortality reduction methods through development of educational programs and distribution of written materials and brochures. These efforts were focused on recreational anglers, and were a continuation of on-going efforts working with the Gulf of Mexico Fishery Management Council in the adoption of release mortality reduction methods in the commercial and recreational reef fish fisheries. Partnerships were also formed with the Florida Fish and Wildlife Conservation Commission and Florida Outdoor Writers Association in developing educational materials and programs.

Results

Our leadership and educational efforts helped with the development and passage of Amendment 24 in the new federal fisheries regulations that will be effective law on 1 June 2008. This will mandate that fish mortality devices and practices such as fish venting tools, fish dehookers and circle hooks be used on every recreational and commercial fishing boat in the Gulf of Mexico. In Florida alone, this will impact approximately 3 million recreational anglers and thousands of commercial fishers. A website is currently being developed on these techniques, and local, state, regional, and national meetings will be held in 2008. Articles on these topics with reference to the Florida Sea Grant Extension website are appearing in regional, state, and local newspapers and fishing magazines. The need for educational outreach on this topic will continue into the foreseeable future.

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife

Outcome #7

1. Outcome Measures

FAMU-Improved management systems, procedures and/or techniques to maintain or improve water quality

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	341

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Water Quality and Environmental Education. In fiscal year 2007 a water quality program was initiated through resources obtained through the Southern Region Water Quality Imitative.

What has been done

This project called 'Quality Water Won't Last Forever' provided the motivation for specialist to work with 200 families to determine the quality of water use on their health in (5) five North Florida counties. Workshops and selected field experiments were conducted by research associates in cooperation with students to determine certain impurities in open wells which has the potential of affecting the health of many limited resource families not having access to drinking water which may normally improve health conditions.

Results

Additional information was provided to this clientele to show the relationship between water and environmental quality on improving the livelihood of a diverse audience. This multistate program will continue with collaborative efforts between Florida A&M University and other 1890 Institutions throughout the southern region.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

111 Conservation and Efficient Use of Water

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Evaluation Results

In the Maintain and Enhance Florida's Environment program area there were more than 1058 activities completed in 2007 to provide solutions to critical needs in this program area. Faculty and staff expended 86940 hours on these programs.As a result, Extension faculty had more than222660 direct clientele contacts. In activities within these programs more than 28196 activity attendees were evaluated and more than 24614 participants showed a knowledge, behavior or conditional change as outcomes to the research-based educational program(s) they attended.Over $ 8110908 dollars were expended in the 1862 portion of this program while FAMU used $ 314640 from state, county and federal sources. This program included both integrated and multistate components. More than 7940 hours were expended by volunteers in this program area at a value of $ 127,437.00.

Key Items of Evaluation

Reducing water use– New IFAS research from Orange, Lake and Marion counties shows that, on average, irrigation accounts for about 50 percent of total potable water use in Florida homes.Homeowners could reduce by half the amount used to water landscapes by using soil-moisture sensor technology. For example: In 2005, more than 208,000 building permits were issued for single-family homes.If each of these home’s irrigation system had a sensor, water savings would be more than 5 billion gallons a year, and water bills would be reduced by $32 million.

Helping decision makers – Since April 2006, 15 low-impact development programs across Florida have reached more than 1,300 professionals whose decisions affect Florida’s water resources.The program, which targets elected officials, developers, planners, engineers and architects, aims for development with increased water efficiency and water quality.

Specialized training for pesticide handlers – To apply pesticides in Florida, one must be licensed.IFAS Extension conducts the training for such licensees on behalf of the state. Today, 4,181 private applicators, 4,595 commercial applicators, and 2,473 public applicators, are licensed.

Program #3

V(A). Planned Program (Summary)

1. Name of the Planned Program

Developing Responsible and Productive Youth Through 4-H and Other Youth Programs

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%	100%	100%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	83.0	1.0	0.0	0.0
Actual	86.0	3.5	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
779165	307107	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
6533112	307107	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
7528958	50100	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Advisory Council93Classroom Enrichment165Clinics50Consultations54County Event247Curriculum Development25Demonstration/Fields Trials9Developing Educational Materials36Developing Partnerships and Collaborations96District Event89Facilitating Groups94Fairs/Exhibits116Field Days41Funding Efforts63Group Teaching Events713In-Service Training32Marketing93Needs Assessment5Program Development208Reporting Results13State/National Event124Video Conference1Working With Media7
Total activities for 2007 were 2374

2. Brief description of the target audience

•Youth •Youth all ages (K-12) •Youth, 4H EFNEP •Youth, ages 8-18 •Youth 5-7 (grades K-2) years of age
•Youth 8-10 (grades 3-5) years of age •Youth 11-13 (grades 6-8) years of age
•Youth 14-18 (grades 9-12) years of age •Extension Staff and Faculty •Extension Staff and Faculty •Donors
•Donors •Volunteers •Teachers •4H EFNEP Volunteers •School Administrators
•Judges/Coaches for Events and Activities •Club Volunteers •Teams of Volunteers
•Certified, Master, or Key Project Volunteers •Resource Volunteers •Community Organizations
•Youth Volunteers all ages

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	354937	9357276	0	0
2007	10008	0	234098	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	54	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Field trials classroom enrichment

Year	Target	Actual
2007	30	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Youth improve communication skills. Youth develop decision-making, problem-solving and critical thinking skills Youth develop improved competencies of goal-setting, planning and organizing Youth develop positive relationship skills with others Youth develop leadership skills Youth develop competencies in citizenship and civic engagement Youth develop employability and workforce preparation skills Youth develop positive personal competencies of self-esteem and self-confidence Youth develop increased self-responsibility Youth develop increased competencies in personal ethics/character Youth develop positive social skills Youth improve agricultural and environmental knowledge/skills Youth improve skills in animal sciences Youth develop improved family and consumer skills Youth develop healthy lifestyle choices Youth develop science and technology skills Staff/volunteers improved competencies to deliver youth program
2	Develop communication skills
3	Develop Science and Technology skills
4	Develop healthy health style choices
5	improve volunteer development procedure and techniques
6	4-H delivery systems demonstrate quality and excellence
7	FAMU--Develop employability and workforce preparation skills

Outcome #1

1. Outcome Measures

Youth improve communication skills. Youth develop decision-making, problem-solving and critical thinking skills Youth develop improved competencies of goal-setting, planning and organizing Youth develop positive relationship skills with others Youth develop leadership skills Youth develop competencies in citizenship and civic engagement Youth develop employability and workforce preparation skills Youth develop positive personal competencies of self-esteem and self-confidence Youth develop increased self-responsibility Youth develop increased competencies in personal ethics/character Youth develop positive social skills Youth improve agricultural and environmental knowledge/skills Youth improve skills in animal sciences Youth develop improved family and consumer skills Youth develop healthy lifestyle choices Youth develop science and technology skills Staff/volunteers improved competencies to deliver youth program

2. Associated Institution Types

{No Data Entered}

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	25	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	

Outcome #2

1. Outcome Measures

Develop communication skills

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	113279

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

To 'develop marketable/productive skills for work and family life' such as communication skills has been cited by Connell, Gambone, and Smith (2000)as a major coutcome for positive youth development. Communication can help a youth do well in school, develop positive interests and acquire a basic life skill for work and family life that is important for the transition from youth to adulthood.

What has been done

4-H has provided communication/Expressive Arts projects and activities such as speech contests and county, state, state and national speaking opportunities such as county events.

Results

Communication/Expressive Arts which includes the 4-H Tropicana Public Speaking Program (2007 participants totaling 109,014) has gradually increased in numbers from 80,000 in 1995 to 113,279 in 2007.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #3

1. Outcome Measures

Develop Science and Technology skills

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	33646

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

4-H uses a variety of project skills to engage youth in areas of interests to not only acquire new skills but becoome the 'vehicle' through which youth engage with other adults, engage in self-directed learning, setting goals, making independent choices, and decisions and gaining a sense of mastery and accomplishments from their experiences in directions that could eventually lead to career choices. Among these career choices are those related to science and technology.

What has been done

Interest in the area of science and technology for career choices is of extreme interest to the national health of the United States and for this reason is considered important to the state of Florida and the nation. Projects in Science and Technology in 2007 is close to the all time high reached in 2001..

Results

In 2007 more than 33,646 projects were studied with the most popular including entomology, Marine Science and Embryology

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Develop healthy health style choices

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	39338

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Childhood obesity is at epedemic levels in the United States.

What has been done

4-H has developed programs that help youth learn to develop healthy decisions and quality of life changes

Results

With a slight increase in healthy life styles in 2007 over 2006, a total of 39,338 youth were engaged in helathy decision making and quality lifestyles. These types of decisions will lead to a better quality of life with fewer cases of nutrition related disease and obesity.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #5

1. Outcome Measures

improve volunteer development procedure and techniques

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	10919

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Studies confirm the value of a significant adult in addition to a parent or guardian in the life of a child. UFIFAS research conducted in Florida showed that volunteer support mediates the relationship among learning opportunities, supportive environments, and youth outcomes (Fogarty et al., 2007). Other research has shown that '... all youth have the potential to succeed, but ... the likelihood of success is greatest when youth regularly experience positive adult interaction and mentorship and are involved in youth development programs' (Learner, 2007). In 2007, Florida 4-H engaged 10,925 volunteers in providing supportive learning environments for youth enrolled in programs in all 67 Florida counties and the Seminole Tribe. Over 10,000 are adults and 900 are youth volunteers.

What has been done

* 87 UF/IFAS Extension faculty, from 71 different units across the state, conducted programs addressing volunteer development and management.
* There were 61 counties reporting volunteer development programs in Florida.
* Over 7,000 days were expended by faculty and staff expanding and enhancing volunteer involvement in the 4 -H and Youth Development program.
* 4-H volunteers expended nearly 30,000 days providing direct services to youth and managing and training other volunteers in the 4-H and Youth Development program.
* 656 activities represented 7 key subjects targeting volunteer development, volunteer management and volunteer systems to support youth development. These were:
- Education to enhance volunteer effectiveness through improved competencies in leadership, communication, planning, problem-solving, and decision making (129)
- Recruitment to expand volunteer involvement (125)
- Orientation of volunteers to introduce volunteers to extension education and 4-H (117)
- Volunteer screening to create a safe environment for youth (98)
- Training volunteers to educate other volunteers (1)
- Recognizing volunteers for their contributions (60)
- Management and evaluation to improve efficiency and effectiveness of volunteers and volunteer programs (126)

Results

* Florida 4-H Youth Development leverages public resources with private contributions. Using the Independent Sector calculation of $18.76hour, 4-H volunteers contributed $45,000,000 in volunteer time to the development of youth in Florida.

* Florida 4-H Youth Development improves the personal health and safety of youth by screening and selecting volunteers. A statewide survey of 570 youth surveyed in 2007 97.8% indicated that 4-H provides a safe place to learn and grow.

* Florida 4-H Youth Development is developing the workforce of tomorrow. Florida 4-H volunteers provided 9,884 learning environments for youth to learn and grow. A statewide survey of 593 youth surveyed in 2007 98% of them indicated that as a result of their 4-H experience, they are learning work related skills.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6

1. Outcome Measures

4-H delivery systems demonstrate quality and excellence

2. Associated Institution Types

•1862 Extension
•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	2464

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth involved in structured learning environments will benefit from being a part of: a physically and emotionally safe environment; developing positive relationships with others; feeling a sense of belonging in an inclusive environment; having competencies for self-resilience, independence, and autonomy; being engaged as active citizens through service and leadership; and developing skills and competencies for work and family life.

What has been done

4-H provides a safe learning environment through the following delivery methods: community clubs, day camps, overnight camping, 4-H in the Classroom, and after-school programs. Florida 4-H supports county learning environments by managing financial and human resources, utilizing appropriate educational materials, and creating opportunities for youth experiences and effective communication between youth and adults. Additionally, effective and efficient programs leverage resources and expertise with other youth organizations to maximize outcomes and community impacts. 4-H has developed many partnerships across the state to make these opportunities successful for youth.
Current Partnerships Established with Florida 4-H:

* Florida Department of Health and joint proposals with CDC
* Museum of National History (NSF Grant)
* College of Engineering - Energy and Sustainability
* U.S. Department of Energy - curriculum & teaching outreach
* Florida Ag in the Classroom
* 4-H Tropicana Public Speaking
*Florida Department of Agriculture
*Local County School Boards
*Fair Boards
*County Governments
*Florida A&M
*Joint Family Support Assistance Program National Initiative (Department of Defense)
November 2007 one of 15 states selected
Partners: Florida Army and Air Guard
Military OneSource
Red Cross
Military Family Life Consultants
*Operation: Military Kids, as part of the 4-H/Army Youth Development Project, is a vital
part of the Army Integrated Family Support Network (AIFSN) delivery system. The program serves all deployed service members families of all branches. Florida 4-H has three outreach staff in Bay County, Pinellas County, and Miami-Dade County to serve local deployed service member families.
State partners are: American Legion, Boys and Girls Clubs, Military Education Coalition, Child Youth Services, Alachua County Military Support Group, Florida Army and Air Guard Army Reserves, Marine Reserves, and Naval Reserves.
*United States Air Force - Youth Programs
    Huriburt Field/Elgin AFB - Okaloosa County
    Tyndall AFB - Bay County
    MacDill AFB - Hillsborough County
    Patrick AFB - Brevard County
Air Force youth programs in the European Theatre
*United States navy - Youth Programs
    Jacksonville Naval Air Station/ Mayport Naval Station - Duval County
    Pensacola Naval Station / Whiting Field Naval Air Station - Escambia County
    Key West naval Station - Monroe County
    Panama City Naval Surface Warfare Center - Bay County
    Navy Youth programs in the European Theatre
* College of Fine Arts

Results

* There were 11,369 learning environments (community clubs, day camps, overnight camping, 4-H in the Classroom, and after-school programs) that support 4-H youth development work in Florida.

* 26,063 youth were enrolled in 1,316 organized clubs. 221,623 youth participated in 4-H in the classroom educational programs.

* Florida 4-H faculty, staff, and volunteers have expended over 15,344 days in activities relating to clubs, after-school programs, 4-H in the classroom, and 4-H special interest programs, day camps and residential camps.

* 2,573 educational activities were organized, planned and implemented in 2007.

* Volunteers devoted over 35,472 hours in developing learning environments to support youth, which translates into over $650,000 worth of services. (Independent Sector, 2007)

* 178 Extension education programs targeted Florida residents, governmental and regulatory agencies, educators, non-governmental organizations, and youth.

* 92 Florida 4-H faculty in 57 counties reported in this focus area. 57 of the 67 counties and the Seminole Tribe reported at least one program within organizational strategies and learning environments. This was a 14% increase from those reporting last year.

* Four residential camps are heavily utilized by county faculty during the summer months with supplemental use of the facilities by IFAS, governmental, and outside user groups. Over the next four years, each of the 4-H camps will become American Camp Association Certified, making them more attractive for both internal and external users. 2,398 youth participated in residential camping in 2007. This is a 5% increase in attendance from 2006.

* Youth led State Executive Board, Executive Council, and officer groups carry out their own organizational goals and projects through four regular meetings and leadership training opportunities. These state groups are only the tip of the leadership training provided at the county and district levels in youth councils, leadership conferences, and related youth led educational activities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #7

1. Outcome Measures

FAMU--Develop employability and workforce preparation skills

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	502

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

4-H Youth Development 1890. Discovering agriculture careers by youth throughout the country was a program initiated by USDA-APHIS and hosted by Florida A&M University Cooperative Extension Program in fiscal year 2007.

What has been done

Florida A&M University is one of (4) four institutions that have participated in the program in the last four years. This summer program recruited youth ranging in age from 14-17 years. A total of 22 students: 12 females and 8 males were selected to participate in the program. These students were well represented expanding as far as New Mexico and California. Two students from Tallahassee, FL were selected for the first time.

Results

This youth development program was designed to build character and introduce students to careers and other life experiences utilizing several animal species. The program allowed students to experience cultural enrichment and basic life coping skills. In addition, it provided insight to various career fields in animal science and related areas including a diversity of animal industries, clinical and diagnostic laboratories, veterinary medicine, recreational and cultural activities. The success of this program has allowed us to use it as a model for future youth development programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

In the Developing Responsible and Productive Youth Through 4-H and Other Youth Programs program area there were more than 2374 activities completed in 2007 to provide solutions to critical needs in this program area. Faculty and staff expended 232113.6 hours on these programs.As a result, Extension faculty had more than10008 direct clientele contacts. In activities within these programs more than 78656 activity attendees were evaluated and more than 71528 participants showed a knowledge, behavior or conditional change as outcomes to the research-based educational program(s) they attended. Over $ 14841235 dollars were expended in the 1862 portion of this program while FAMU used $ 664314 from state, county and federal sources. This program included both integrated and multistate components. More than 242296 hours were expended by volunteers in this program area at a value of $ 3,888,850.80. Some program highlights in this program area include the following:

- 87 UF/IFAS Extension faculty, from 71 different units across the state, conducted programs addressing volunteer development and management.

- There were 61 counties reporting volunteer development programs in Florida.

- Over 7,000 days were expended by faculty and staff expanding and enhancing volunteer involvement in the 4-H and Youth Development program.

- 4-H volunteers expended nearly 30,000 days providing direct services to youth and managing and training other volunteers in the 4-H and Youth Development program.

- 656 activities represented 7 key subjects targeting volunteer development, volunteer management and volunteer systems to support youth development.These were:
  § Education to enhance volunteer effectiveness through improved competencies in leadership, communication,planning, problem-solving, and decision making (129)
  § Recruitment to expand volunteer involvement (125)
  § Orientation of volunteers to introduce volunteers to extension education and 4-H (117)
  § Volunteer screening to create a safe environment for youth (98)
  § Training volunteers to educate other volunteers (1)
  § Recognizing volunteers for their contributions (60)
  § Management and evaluation to improve efficiency and effectiveness of volunteers and volunteer programs (126)

Key Items of Evaluation

- Florida 4-H Youth Development leverages public resources with private contributions.Using the Independent Sector calculation of $18.76hour, 4-H volunteers contributed $45,000,000 in volunteer time to the development of youth in Florida.

- Florida 4-H Youth Development improves the personal health and safety of youth by screening and selecting volunteers.A statewide survey of 570 youth surveyed in 2007 97.8% indicated that 4-H provides a safe place to learn and grow.

- Florida 4-H Youth Development is developing the workforce of tomorrow.Florida 4-H volunteers provided 9,884 learning environments for youth to learn and grow.A statewide survey of 593 youth surveyed in 2007 98% of them indicated that as a result of their 4-H experience, they are learning work related skills.

Program #4

V(A). Planned Program (Summary)

1. Name of the Planned Program

Create and Maintain Florida Friendly Landscapes: The Smart Way to Grow

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	10%	10%	10%	
102	Soil, Plant, Water, Nutrient Relationships	10%	10%	10%	
112	Watershed Protection and Management	10%	10%	10%	
133	Pollution Prevention and Mitigation	10%	10%	10%	
201	Plant Genome, Genetics, and Genetic Mechanisms	10%	10%	10%	
204	Plant Product Quality and Utility (Preharvest)	10%	10%	10%	
205	Plant Management Systems	10%	10%	10%	
206	Basic Plant Biology	10%	10%	10%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%	10%	10%	
212	Pathogens and Nematodes Affecting Plants	10%	10%	10%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	60.9	0.5	0.0	0.0
Actual	60.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
543603	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
4557985	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
5252762	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Advisory Council37Classroom Enrichment39Clinics37Consultations106County Event32Curriculum Development25Demonstration/Fields Trials53Developing Educational Materials57Developing Partnerships and Collaborations31District Event9Facilitating Groups19Fairs/Exhibits54Field Days27Funding Efforts7Group Teaching Events655In-Service Training14Marketing28Needs Assessment5Program Development46Reporting Results11State/National Event7Video Conference1Working With Media68
Total activities in 2007 were 1368

2. Brief description of the target audience

Professional Horticulture Services/Urban Forestry •Builders and Developers •Business Owners and Managers •County Faculty •Pesticide Applicators •Professional Horticulture Services •Property Managers •Recreational Turf Managers •Regulators and Policy Makers •Retail and Allied Services •Florida Residents •Homeowners •Landscape managers •Master gardeners •Commercial diagnostic service •Lawn maintenance service •Landscape design, installation, and maintenance service •Urban forestry service •Private and public golf clubs •Parks and trails •Solicitors of professional landscape services •Homeowners •Commercial residential property managers •Homeowners associations •Rental property managers •Business owners •Golf clubs •Beach resorts •Parks and trails (government agency) •Department of Transportation •Government and educators •Extension faculty •Public lands managers •Community educators and planners •Funding agencies •Regulators and policy makers •Master Gardeners/Florida Yard Advisors •Schools/school boards

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	370048	200036865	0	0
2007	648643	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	34	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Field trials classroom enrichment

Year	Target	Actual
2007	10	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Decreased landscape costs, pesticide usage, landscape call backs, disease problems, improper pesticide usage (industry, survey) Improved basic diagnostic/identification skills, diagnostic/identification services, landscape maintenance services provided, pesticide usage, Florida landscapes (measured through clientele testimony, comment, survey). Increase usage of diagnostic services, demand for professional services that utilize diagnostic services (measured by usage data from clinics, EDIS publications demand) Increased awareness of plant pest problems, available diagnostic services, biosecurity risks, control choices (measured with "before and after" questions or surveys)
2	Improve use of BMPs for managing Florida landscapes
3	Improved compliance with local, state and federal regulations

Outcome #1

1. Outcome Measures

Decreased landscape costs, pesticide usage, landscape call backs, disease problems, improper pesticide usage (industry, survey) Improved basic diagnostic/identification skills, diagnostic/identification services, landscape maintenance services provided, pesticide usage, Florida landscapes (measured through clientele testimony, comment, survey). Increase usage of diagnostic services, demand for professional services that utilize diagnostic services (measured by usage data from clinics, EDIS publications demand) Increased awareness of plant pest problems, available diagnostic services, biosecurity risks, control choices (measured with "before and after" questions or surveys)

2. Associated Institution Types

{No Data Entered}

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	30	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	

Outcome #2

1. Outcome Measures

Improve use of BMPs for managing Florida landscapes

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	30984

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The state of Florida includes 17 million residents, 70 million annual visitors, a unique ecology and climate, and a wide range of plant material grown year round. According to a 2002 FNGLA/IFAS impact study, the professional horticulture services industry generates $7.6 billion per year in revenue. This industry employs more than 120,000 people, including a large, underserved, Spanish-speaking population.

With approximately 5 million acres of home lawns and landscapes in the state of Florida, it is critical that commercial horticulture services understand the implications of improper activities on potential pollution of our water bodies. Florida homeowners and commercial property managers rely on this industry for landscape management of large expanses of this acreage. Additionally, poor business management practices impact the economic viability of this industry by causing many horticultural professionals to fail.
Increasing regulations are placing more training requirements on the commercial horticulture industry in an attempt to reduce potential pollution.Educating our customers about basic plant biology, soil and water relationships, and accurate diagnosis of weeds, plant pests, and pathogens will result in proper landscape management and reduced environmental impact. Inappropriate landscape management practices affects environmental quality for all Floridians. UFIFAS Extension research and science-based educational programs can provide the professional horticulture industry with best management practices and skills necessary to create and manage landscapes, reduce risk to the environment.

What has been done

Florida Friendly Baseball: Earlier this year, Pinellas County FYN helped re-do the east entrance to St. Petersburg's Tropicana Field in Florida-friendly style. The Tampa Bay Devil Rays matched funds for this project from a Pinellas County Environmental Fund (PCEF) grant. Other collaborating organizations included the City of St. Petersburg, Tampa Bay Estuary Program, and Phil Graham Studios, which helped design the landscape and interpretive signs outside the stadium.

This PCEF grant also provided for in-stadium messaging about the Florida-friendly stadium project and the nine principles of Florida-friendly landscaping. Fans watching at home saw video messages about the project, developed by the Devil Rays, during television broadcasts of home games. The landscape, the majority of the signs, and the between-inning messages were all ready for opening day on April 6, 2007. The Devil Rays have applied to PCEF to fund a similar landscape retrofit of the southwest entrance after this year's season ends.

Fertilizer Video: Extension agents are increasingly using television for educational outreach. Pinellas Planting is a series of television segments airing monthly on Pinellas County Government's weekly newscast Inside Pinellas on Pinellas TV-18. The objective is to offer UF/IFAS-research- based lawn and garden information to viewers in an entertaining format.

Each segment airs the last week of the month with timely information for the coming month. The February segment 'Fertilizers' aired 1/26/07 through 2/2/07 four times a day (7 a.m., 12 noon, 7 p.m., & 11 p.m.) for a total of 28 airings. It also remains accessible by streaming video on the Pinellas TV-18 website http://www.pinellascounty.org/pinellasplanting.htm), along with links to relevant UF/IFAS publications. Pinellas TV-18 is carried by two cable franchises in Pinellas County with a total of 384,000 subscriber homes. The fertilizer segment is a National Association of County Agricultural Agents 2007 National Finalist Winner in the Video Communications category.

St. Lucie, Duval, Miami-Dade Counties:
IPM Toolbox: The use of Integrated Pest Management (IPM), including the application of pesticides only when appropriate, is important if we want to live in a sustainable Florida. With more of Florida's Nursery and Landscape Industry workers becoming Spanish-speaking, it is vital that IPM training become available in Spanish language format. The Spanish IPM Scouting Kit is a collaboration between Duval, St. Lucie, and Miami-Dade County Commercial Extension Agents.

This inter-county team created the Spanish IPM toolbox, a collection of landscaping tools and UF/IFAS EDIS publications about weed, disease, and insect identification and treatment translated into Spanish. Spanish Powerpoint lessons accompanied the instruction in use of these materials to a sampling of landscape workers from the three counties. Twenty-eight participants from fourteen landscape companies were selected for the training, which proved successful according to participants' verbal reports, who felt that they were better able to serve their customers because of the training. In a six-month follow-up survey, it was found that the training handouts were being used by landscape employees anywhere from daily to once a month, with an average of once or twice per week.

Results

In one county in Florida alone More than 115,541 Internet downloaded publications for gardening publications especially for the agent's 'Low Maintenance Plants for S. FL' publication EDIS publication on-line. Plants listed require less water, fertilizer, and pesticide inputs. Use of these plants will reduce homeowner landscape expenses. More than 115,541 Internet downloaded publications for gardening publications especially for the agent's 'Low Maintenance Plants for S. FL' publication EDIS publication on-line. Plants listed require less water, fertilizer, and pesticide inputs. Use of these plants will reduce homeowner l Through the Adopt-A-Tree grant to help reforest the county, over 16,000 trees were distributed to homeowners in 2007. 32,000 people learned how to properly plant and maintain their trees. 51,000 publications were distributed. Survey results (1- 2 yrs after event) indicated 82.6% satisfied with adopted trees, 96.9% satisfied with educational materials, 73% trees were growing well and 18% were ok.

The agent and program assistant identified over 1800 plant and insect samples. Savings to homeowners is over $36,000 ($20 per sample).

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
212	Pathogens and Nematodes Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
211	Insects, Mites, and Other Arthropods Affecting Plants
112	Watershed Protection and Management
101	Appraisal of Soil Resources
206	Basic Plant Biology
205	Plant Management Systems
102	Soil, Plant, Water, Nutrient Relationships

Outcome #3

1. Outcome Measures

Improved compliance with local, state and federal regulations

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	3467

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As part of the new Fertilizer and Landscape Management Code enacted in August 2007, every company applying fertilizer in Sarasota County must obtain a Certificate of Completion from the Best Management Practices (BMP) program. BMPs are increasingly being conducted in Spanish as well as English to serve the growing number of Hispanic Green Industry workers.

What has been done

At the request of advisory committees, Manatee and Sarasota Counties Extension offered pesticide safety training to pesticide applicators working under the supervision of Pest Control Operators.

Results

121 technicians attended the three trainings, of which thirty-two were Spanish speakers. More Spanish-language trainings will be offered in 2008.

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
102	Soil, Plant, Water, Nutrient Relationships

205	Plant Management Systems
112	Watershed Protection and Management
101	Appraisal of Soil Resources

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Case Study

Evaluation Results

In the Create and Maintain Florida Friendly Landscapes: The Smart Way to Grow program area there were more than 1368 activities completed in 2007 to provide solutions to critical needs in this program area. Faculty and staff expended 170380 hours on these programs.As a result, Extension faculty had more than648643 direct clientele contacts. In activities within these programs more than 73803 activity attendees were evaluated and more than 60642 participants showed a knowledge, behavior or conditional change as outcomes to the research-based educational program(s) they attended.Over $ 1035435 dollars were expended in this program from state, county and federal sources. This program included both integrated and multistate components. More than 96478.4 hours were expended by volunteers in this program area at a value of $ 1,548,478.32.

Key Items of Evaluation

Better landscaping, proper pest control– IFAS has programs based on the research conducted at IFAS throughout Florida to train homeowners, builders, developers, landscape workers and architects in proper fertilizer and water use as well as proper pest control. In Sarasota and Manatee counties, more than 1,500 landscape and pest management employees participated in 26 professional development classes during 2006 and the first half of 2007.

Smarter landscaping – Florida-friendly landscaping programs are being conducted around the state for homeowners, builders, developers, landscape architects, landscape workers and homeowner associations. One success story: One homeowner association in St. Petersburg with 22 waterfront and 51 inland town homes was alarmed at its irrigation costs. County extension faculty provided help and in one year, the average monthly water savings was almost 200,000 gallons. About 2.4 million gallons of drinking water were conserved.

Program #5

V(A). Planned Program (Summary)

1. Name of the Planned Program

Assist Individuals and Families to Achieve Economic Well-being and Life Quality

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
112	Watershed Protection and Management	10%	10%	10%	
136	Conservation of Biological Diversity	10%	10%	10%	
602	Business Management, Finance, and Taxation	10%	10%	10%	
603	Market Economics	10%	10%	10%	
604	Marketing and Distribution Practices	10%	10%	10%	
608	Community Resource Planning and Development	10%	10%	10%	
701	Nutrient Composition of Food	10%	10%	10%	
703	Nutrition Education and Behavior	10%	10%	10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	10%	10%	10%	
723	Hazards to Human Health and Safety	10%	10%	10%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	63.0	1.0	0.0	0.0
Actual	90.0	3.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
815405	170615	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
6836977	170615	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
7879143	100000	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Advisory Council54Classroom Enrichment95Clinics16Consultations57County Event22Curriculum Development24Demonstration/Fields Trials3Developing Educational Materials88Developing Partnerships and Collaborations88District Event9Facilitating Groups29Fairs/Exhibits69Field Days4Funding Efforts5Group Teaching Events677In-Service Training59Marketing43Needs Assessment7Program Development53Reporting Results12State/National Event20Video Conference1Working With Media27
Total activities in 2007 were 1462

2. Brief description of the target audience

•Individuals/families •Families •Parents •Young Children •Youth •Couples •Caregivers •Individuals •Elders •Grandparents •Professionals/practitioners •County Faculty •Family Service Providers •Child Care Providers •After School Providers •Elder Care Providers •Teachers •Volunteers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	138126	6496614	0	0
2007	549113	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	115	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- classroom

Year	Target	Actual
2007	1	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Family members will learn strategies to prepare for the changes they face over the course of family life (e.g. marriage, parenting, retirement, etc.). Individuals will develop the skills needed to manage stress effectively, thereby improving their personal health and relationships. Individuals will learn the knowledge and skills necessary to attain strong, healthy family relationships. Program participants will achieve an acceptable quality of life by managing available resources well enough to live within their incomes, by budgeting to achieve family goals, and by debt management. Demonstrate increased knowledge of basic nutrition. Demonstrate increased knowledge of healthy lifestyle practices.
2	Improved practices to strengthen individuals, couples and families.
3	Improve practices to strengthen couples and families
4	improve procedures and techniques to manage debt
5	Improved nutrition and other lifestyle behaviors
6	Improved procedures and techniques to maintain a healthy and safe home
7	Promote self-reliance and independence
8	FAMU--Improve nutrition and other lifestyle behaviors

Outcome #1

1. Outcome Measures

Family members will learn strategies to prepare for the changes they face over the course of family life (e.g. marriage, parenting, retirement, etc.). Individuals will develop the skills needed to manage stress effectively, thereby improving their personal health and relationships. Individuals will learn the knowledge and skills necessary to attain strong, healthy family relationships. Program participants will achieve an acceptable quality of life by managing available resources well enough to live within their incomes, by budgeting to achieve family goals, and by debt management. Demonstrate increased knowledge of basic nutrition. Demonstrate increased knowledge of healthy lifestyle practices.

2. Associated Institution Types

{No Data Entered}

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	

Outcome #2

1. Outcome Measures

Improved practices to strengthen individuals, couples and families.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	5384

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The purchase of prescription drugs has been identified as a key stressor by older adults who frequently under-utilize their prescribed drugs due to cost, and resort to drug sharing, drug stretching, or drug neglecting. In response the federal government instituted a prescription drug program commonly known as Medicare Part D.

What has been done

With the support and assistance of CSREES and collaboration with Centers for Medicare and Medicaid Services (CMS), National Council on Aging (NCOA), The University of Florida's College of Pharmacy and Florida Extension faculty from 27 counties, a program was devised and implemented to meet the primary objective which was to provide unbiased information about choosing among myriad Medicare Part D plans to older Floridians through county Extension faculty. Educational materials for county faculty were posted on a website to be accessed during and after an 8 hour webinare and included 11 PowerPoint slide sets, 13 distinct web-pages, and 9 links. An up-date training was held the following year. Materials written in Spanish were accessed from CMS. County faculty data was gathered monthly using a monthly electronic survey to determine the number of groups and individuals they had met with and how many of those were limited income beneficiaries.

Results

As a result of this project County faculty assisted 3,248 individuals understand choices with Medicare Part D. Of those, approximately 2,000 were limited resource beneficiaries. Although the exact figures are not yet know, CMS conservatively estimates that limited resource beneficiaries will experience a lifetime savings of at least $4,000 yielding an economic impact of this program in 27 counties exceeding $8,000,000. Based upon the early success of this program AARP Florida provided $20,000 to fund a Spanish speaking para-professional to serve Pasco and Hillsborough. Building on the success of that program, the national AARP office provided $108,000 to fund similar programs in counties with high percentages of limited resource beneficiaries.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

Outcome #3

1. Outcome Measures

Improve practices to strengthen couples and families

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	5383

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to the 2006 American Community Survey, 12.6 percent of the population in Florida over age 15 is divorced. There is evidence of a connection not only between divorce and social problems, but also the economic losses such social problems pose, as well as research findings suggesting that children are likely to suffer negative consequences from experiencing marital discord and divorce. Research suggests that premarital preparation can improve marital outcome, so participation in premarital preparation has the potential to improve the emotional and economic outcome for families.

What has been done

In 1999 the state of Florida initiated a new policy on marriage preparation. The policy provides a marriage license fee discount of $32.50 for those who attend an accepted form of premarital preparation, as well as a waiver of the 3-day waiting period to marry, as an incentive for couples to participate in marriage preparation classes. In response to the needs of Florida citizens for premarital preparation programs, the University of Florida Cooperative Extension service created the 'Before You Tie the Knot' program. This program has four parts, and covers the topics of communication, conflict resolution, money matters, and marriage and parenting. The goal of the program is to help participants identify any potential problems or conflicts that could come up during the marriage and address them prior to getting married. This program is provided at low or no cost to Florida citizens in several counties.

Results

This program began in 2003, and has continued to grow. In 2007, approximately 89 couples completed the 'Before You Tie the Knot' program in several counties across the state. Outcome studies suggest that participants find the program helpful. One of the biggest benefits reported by couples who have completed the 'Before You Tie the Knot' program is that they feel more confident about how to handle problems that might arise in their marriage.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

improve procedures and techniques to manage debt

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	7034

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to the Federal Reserve household debt has hit a record high of 109 percent of household income. Personal savings is at an all time low and personal bankruptcies are up 29 percent in the past five years. In 2003, 32,170 non-business bankruptcies were filed in Florida- up 5% from 2002. That number is expected to increase at least through 2010.

The Department of Justice oversees the rules for the filing of bankruptcy. Currently the trustees are requiring that the petitioner attend a class on credit counseling and one on financial management. Many Family and Consumer Science Agents have financial management as one area of expertise and felt the program was consistent with programs presented by Florida Extension throughout the state.

What has been done

The procedures were met and Florida Extension was selected as an approved provider of this class by the Department of Justice. In Florida the class is called Building Your Financial Future. Agents were trained and then allowed to provide programming that followed one of two outlines: Becoming Captain of Your Financial Ship or the Money Smart program by FDIC. The classes would be taught by the FCS Agents in a total of a minimum of 4 hours in face-to-face settings. Fees are established by the Department of Justice and may not exceed $25.00. There is an electronic method of registering and printing certificates from the Department that verify the attendance of petitioners.

FCS agents providing the classes must maintain that their instruction addresses the four basic elements relating to basic financial resource management: developing a budget, money management skills, using credit responsibly and rights and responsibilities of consumers. Participants in the program ranged in income, since bankruptcy is not limited to low income households. The program was open to anyone who needed it as required by bankruptcy law. The fee was waived for only 18% of the participants; who would have qualified based on lack of resources (E.g. unemployed).

Results

During 2007 UF Extension Debtor Education Program helped 294 participants; issuing as many Certificates. The overall program delivery was highly regarded by the participants. A survey was completed by 125 participants in five of the eight initial counties to the end of the program; it included a retrospective pre-survey. It was used to assess changes in skills and intentions regarding behaviors. By the end of the program, virtually everyone felt they possessed the financial management skills outlined by the program. The behaviors included budgeting and savings, working with financial institutions, and credit management, credit building, and consumer protection. Most (88%) planned to engage in budgeting, saving, and examining financial statements. Only 28% said they did this prior to the program. The numbers were similar for other behavioral measures.

This program has provided needed information and helped petitioners meet the requirements for bankruptcy filing but also proved a positive programming step for Florida Extension. It opened a door to network with a professional group, attorneys, that many agents had not had an opportunity to partner with previously. It demonstrated to both the professionals and petitioners the value of Extension FCS educators. Many come to the class because they are required to, but agents report they leave glad that they did come to get such timely and appropriate financial information. Agents report that many are quoted as saying that high-school students should be required to take this class so they know about and can plan for financial issues in life. The evaluation at the end of the class confirms their approval of the material and the instructors.
We plan to expand the reach of this program during 2008, training additional Extension faculty in the Debtor Education Program. This opportunity has proven to be a benefit to extension in at least three major considerations:
It provides an opportunity for agents to network with another professional group in their community.
It provides a needed service to the petitioners to meet their requirements.
It provides a source of income (by fee generation...at usually a much lower cost that other class providers) for FCS agents to then augment other financial programming.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #5

1. Outcome Measures

Improved nutrition and other lifestyle behaviors

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	25564

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Nutrition-related conditions and diseases, such as obesity and diabetes, can have serious impacts on the state's economy. The prevalence of obesity in the U.S. has been rising and in Florida 25% of the population is obese and at high risk for health consequences. Another 50% of the population is overweight. The annual estimated cost of medical expenses related to obesity in Florida is $4 billion, and indirect costs to the state such as work income lost due to decreased productivity and absenteeism, add another $3.6 billion to the cost of obesity in Florida.

Obesity increases risk for a number of serious diseases including heart disease and diabetes. Diabetes is at an epidemic level, with approximately 21 million people living with diabetes in the United States and over one million in Florida. One-third of these persons are undiagnosed, which places them at extremely high risk for serious and expensive health complications such as blindness, amputations, kidney disease, and heart disease. In addition to the tremendous human cost of diabetes, it is the most expensive of the chronic diseases. According to the American Diabetes Association, the cost of yearly medical expenditures is $13,243 for an individual with diabetes compared with $2,560 for person without diabetes. One-third of Medicare spending is for patients with diabetes. The annual total cost of dealing with the diabetes epidemic in Florida is almost $13 billion. Approximately $1 in every $10 health care dollars in Florida is attributed to diabetes. In Florida the medical cost of diabetes is $8,699,000,000 and indirect costs are estimated at $3,543,000,000. Indirect costs include factors such as absenteeism, reduced productivity, and lost productive capacity caused by mortality or complete incapacity. In Florida over 1,220,000 have been diagnosed with diabetes. (American Diabetes Association, 2008)

The health complications of type 2 diabetes are preventable with proper diet and exercise, regular blood glucose monitoring, and changes in other lifestyle behaviors. It is well established from large research studies that lifestyle interventions that help persons with diabetes improve their blood glucose control reduce the major health complications and improve quality of life. Helping people better manage their diabetes also can reduce their use of emergency departments and urgent care facilities, and hospitalizations.

What has been done

Florida Extension and research faculty are working hand in hand to find answers and present research-based solutions to address the rising human and economic impacts of obesity and diabetes in Florida.

One IFAS Extension faculty has been co-investigator with colleagues in the UF Health Science Center conducting lifestyle intervention studies with obese women at Extension offices in several medically underserved counties. These National Institutes of Health-funded studies focus on nutritional well-being, physical fitness, weight management, and reduction in health risks including heart disease and diabetes. These studies, have been successful in helping high-risk women achieve and maintain significant weight loss that resulted in improved health outcomes, such as blood lipids, blood glucose and physical fitness. Beginning in 2008, IFAS Extension faculty will collaborate in a follow-up NIH-funded four-year study to identify the ideal intensity of treatment for application in Extension settings across the country.

IFAS Extension and research faculty developed an in-depth collaborative Extension education program - Take Charge of Your Diabetes (TCYD) - to help persons with type 2 diabetes better manage their disease and reduce their health risks. The program is conducted by Extension Family and Consumer Sciences (FCS) county faculty in collaboration with health professionals in their communities. The pilot study of TCYD was so successful in improving lifestyle behaviors and blood glucose control, as measured by reductions in glycated hemoglobin (A1C), that University of Florida IFAS Extension has been funded for the past three years by the Centers for Disease Control and Prevention through the Florida Department of Health (DOH) to provide this evidence-based program across Florida. TCYD has won state, regional and national awards, and has been adopted for use by Extension programs in several states and by other agencies. IFAS Extension recently received funding from DOH to conduct train-the-trainer workshops to extend the outreach of this successful Extension program in communities across the state. Effective collaborations were established as a result of the first train-the-trainer workshop conducted in August 2007, and a second workshop is currently being planned, with funding and support from DOH.

Results

Most recently, in 2007, TCYD was implemented by Extension FCS faculty in 11 counties, with a total of 156 participants, mean age of 56 years. Participants reported significant changes in knowledge and behaviors, which are associated with improved blood glucose control. Potential savings from a reduction in need for medical care due to improved blood glucose control for these 156 people could reach well over $1 million dollars, not including long-term savings on the complications of diabetes including blindness, amputations and kidney disease if improvements are continued over time. The Take Charge of Your Diabetes program is available for use by Extension FCS faculty in all counties where they are available. IFAS Extension continues to provide training to Extension FCS faculty and other through train-the-trainer workshops to expand the impacts of this successful program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #6

1. Outcome Measures

Improved procedures and techniques to maintain a healthy and safe home

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	1884

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There are a large number of households who reside elsewhere and close their homes in Florida for 3 to 5 months during hot and humid seasons. These not only include seasonal residents from either other states or other cooler locations in Florida who come to spend winter time in warmer Florida locations but also include Florida residents who temporarily leave Florida to spend hot summer time in other cooler locations. However, it is a challenge for the seasonal residents to keep their unoccupied Florida homes free from mold and other potential during the hottest and most humid seasons. So, one of the greatest roles of UF IFAS County Extension FCS faculty members is to provide information on how to close Florida homes.

What has been done

It was reported that in 2007 there were over 580 participants in diverse group teaching events on closing Florida home in three Florida counties. Palm Beach County Extension faculty members reached approximately 160 residents through Closing Florida Your Florida Home classes, and distributed Closing Your Florida Home booklets that were developed by the County Extension faculty. Their classes and booklets were featured in local newspapers. Many more residents were also reached through various outlets including media campaigns, individual consultations to clients who visited their county Extension office or via e-mails and telephone calls.

Results

Extension faculty members in Lake County and Sarasota County reached more than 100 clients and 290 clients, respectively through various education outreach classes. Especially, more than 99% of the class participants in Sarasota County who completed the follow-up survey responded that they had made one or more behavioral changes after the classes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

Outcome #7

1. Outcome Measures

Promote self-reliance and independence

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	3008

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Community problems ranging from invasive exotic plants, land use in South Florida, business development, formation of nonprofit organizations and community partnerships to protecting waterways represent selected aspects of extension team 5.5. Working with these issues through extension education programs promoted volunteer utilization and local leaders to focus on identification of issues and educational solutions. Other problems that developed into extension programs utilizing trained volunteers and local leaders included the shopping habits of citizens that lead to poor diet and related physical problems. Citizens who were passionately interested in the issues cited above and those parts of the community that may be impacted without some educational intervention were the target audience of the programs.

The objectives included: Reaching policy makers; influencing the decision process; providing public issues education; obtaining a 501 c 3 IRS tax exemption; developing sustainable community organizations. There were approximately six counties involved in these programs which included Palm Beach, Duval, Monroe and Bay.

What has been done

Some of the activities used to complete these programs and the outcomes associated with then included:
(a) Utilization of the Palm Beach County Master Naturalist and Master Gardener organizations to provide homeowner education. Volunteers reached over 2000 residents prepared an educational exhibit that was used for over two weeks at the South Florida Fair.
(b) Exploring the land development process became a role play exercise for educating and involving youth in public issues in Palm Beach County. Over 224 high school students participated in the role play that developed communication skills, awareness of community resources, and conflict management.
(c) Lake Worth Lagoon Symposium was the vehicle to partner Palm Beach Cooperative Extension with local organizations to learn about the economic value and make informed decisions about protecting water resources. Over 275 participants were involved in presenting educational posters and oral presentations to the public.
(d) The Master Food and Nutrition Educators illustrates the community interest and outreach to 124,334 Duval clients over a period of five years with an average of 83 people working in the program annually and train 20 to 25 volunteers annually.
(e) A committee of three Master Gardener Volunteers was assigned to work on obtaining tax exempt status for the Bay County Master Gardener Program. They prepared and filed the appropriate forms and became incorporated. One member is taking leadership to file for tax exempt status.
(f) Monroe County nonprofit groups participated in business development education. Nonprofit groups worked together to develop sustainable community organizations to share resources and reduce duplicate services. Organizations included Florida Keys Wastewater Assistance Foundation, Paradise Interfaith Network, Just for Kids and others. Ninety four leaders were trained.
(g) Monroe County extension facilitated two interagency meetings to develop processes for community groups to handle problems. Results was county departments and agencies coordinated a distribution of over 5,000 discount prescription cards. Estimated savings of $20 per resident totals $100,000 of direct savings to county residents.
(h) Monroe Extension worked with county school district to provide supplemental programs to 412 students and 18 teachers on community service and volunteerism.

Results

The outcomes of these programs are knowledge based and they are delivered with the social marketing model as a theoretical base which recognizes that awareness is a precursor to changing attitudes which is a precursor to changing behavior.
It is reasonable to anticipate that the citizens reached with these programs will produce a multiplier effect within the community based on the knowledge they received and the issue with which they passionately identified.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #8

1. Outcome Measures

FAMU--Improve nutrition and other lifestyle behaviors

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	5300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

1890 Family Resource Management Program. In fiscal year 2007 Florida A&M University Cooperative Extension Program began a nutrition program entitled 'Nutrition, Fun and Fitness.' This program is designed to address a world wide dilemma/problem of obesity and other health related issues including diabetes and hypertension. Limited resource families in target areas throughout North and Northwest Florida were identified to participate in this program.

What has been done

During the past year over 738 adults and 3,115 youth received nutritional information including information from the USDA food pyramid. The instruction and materials allowed over 1,000 youth participants ages 6-18 to understand the need for changing their eating habits and the need for increased physical activity.

Results

A unique component of this program was the establishment of community garden projects where participation including both youth and adults were actively engaged in hands on experiences in planting, managing, processing, cooking and actually benefiting from cooked meals from their own garden plots. The participants were able to gain first hand knowledge of the nutritional makeup of leafy green vegetables and how to plan a menu for proportional intake at home. Using the 'Organ Wise Guy' curriculum in an urban area 228 males and 219 females received nutritional instruction. This project has led to total community involvement of families, individuals, and others inspired by youth being instructed in changing their eating habits utilizing green leafy vegetables and fruits.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

In the Assist Individuals and Families to Achieve Economic Well-being and Life Quality program area there were more than 1462 activities completed in 2007 to provide solutions to critical needs in this program area. Faculty and staff expended 216880 hours on these programs.As a result, Extension faculty had more than549113 direct clientele contacts. In activities within these programs more than 118242 activity attendees were evaluated and more than 98814 participants showed a knowledge, behavior or conditional change as outcomes to the research-based educational program(s) they attended.Over $ 15531525 dollars were expended in the 1862 portion of this program while FAMU used $ 441230 from state, county and federal sources. This program included both integrated and multistate components. More than 60952 hours were expended by volunteers in this program area at a value of $ 978,279.60.

Key Items of Evaluation

2007 Food Safety and Quality Program in Florida

The University of Florida IFAS Cooperative Extension Food Safety and Quality Program celebrates its seventh year of offering the ServSafeÒ curriculum for food manager certification.Since April 2001, 6,227 people have been trained through the program.In 2007, 954 people registered with the program. This represents, which was a 6.5% increase from the year before (Table 2.)Despite the loss of county faculty because of relocation and retirement, 2007 was a prosperous year. Because the five-year certification period for managers certified in 2003 will end this year, we anticipate an increase in registration comprised of both new customers and previous clients returning for recertification.Overall, the program is healthy with steady growth.

The majority of the program's participants are from restaurants and hotels; other participants include employees of school cafeterias, hospitals, churches, daycare centers, nursing homes, caterers, non-profit programs, volunteer associations, golf courses, gas stations, food production and distribution companies, community centers, camps, county health departments, general stores, and food cart vendors.

Instructional Quality of Food Safety and Quality Program:

The total passing rate increased by 1.28% (from 78.44% in 2006 to 79.72% in 2007 (Table 2.)The average class score in 2007 was 81.78%, which represents a slight increase from 81.74% in 2006.

Major Program Title Medicare Part D Awarness Program

The purchase of prescription drugs has been identified as a key stressor by older adults who frequently under-utilize their prescribed drugs due to cost, and resort to drug sharing, drug stretching, or drug neglecting. In response the federal government instituted a prescription drug program commonly known as Medicare Part D. With the support and assistance of CSREES and collaboration with Centers for Medicare and Medicaid Services (CMS), National Council on Aging (NCOA), The University of Florida's College of Pharmacy and Florida Extension faculty from 27 counties, a program was devised and implemented to meet the primary objective which was to provide unbiased information about choosing among myriad Medicare Part D plans to older Floridians through county Extension faculty. Educational materials for county faculty were posted on a website to be accessed during and after an 8 hour webinare and included 11 PowerPoint slide sets, 13 distinct web-pages, and 9 links. An up-date training was held the following year. Materials written in Spanish were accessed from CMS. County faculty data was gathered monthly using a monthly electronic survey to determine the number of groups and individuals they had met with and how many of those were limited income beneficiaries. As a result of this project County faculty assisted 3,248 individuals understand choices with Medicare Part D. Of those, approximately 2,000 were limited resource beneficiaries. Although the exact figures are not yet know, CMS conservatively estimates that limited resource beneficiaries will experience a lifetime savings of at least $4,000 yielding an economic impact of this program in 27 counties exceeding $8,000,000. Based upon the early success of this program AARP Florida provided $20,000 to fund a Spanish speaking para-professional to serve Pasco and Hillsborough. Building on the success of that program, the national AARP office provided $108,000 to fund similar programs in counties with high percentages of limited resource beneficiaries.

Help for those with diabetes – New research and pilot educational programs were conducted last year in 11 counties for participants suffering from diabetes.Behavioral changes by these 156 participants could reduce their medical costs by $1.6 million. The program will be expanded to all 67 counties in the future. Florida's total cost of battling the diabetes epidemic: more than $13 billion.

Program #6

V(A). Planned Program (Summary)

1. Name of the Planned Program

Healthy Communities

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	20%	20%	20%	
610	Domestic Policy Analysis	20%	20%	20%	
802	Human Development and Family Well-Being	10%	10%	10%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	15%	15%	15%	
805	Community Institutions, Health, and Social Services	10%	10%	10%	
806	Youth Development	5%	5%	5%	
903	Communication, Education, and Information Delivery	20%	20%	20%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.5	0.0	0.0
Actual	7.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
63421	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
531765	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
612822	50000	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Advisory Council7Classroom Enrichment1Clinics4Consultations11County Event9Curriculum Development4Demonstration/Fields Trials4Developing Educational Materials10Developing Partnerships and Collaborations20Facilitating Groups6Fairs/Exhibits4Funding Efforts2Group Teaching Events28In-Service Training7Marketing6Needs Assessment1Program Development22State/National Event3
Total activities in 2007 were 149

2. Brief description of the target audience

Community audiences

•Government •Local Government •State Government •Regional Agencies •Non-Governmental Organizations •Economic Developmental Organizations •Chambers of Commerce •Non-Profit Organizations •Individual Citizens and Citizen Groups •Clubs, Community and other Civic Organizations •Individuals •Quasi-governmental Organizations •Economic Development Organizations •Tourism Development Organizations •Housing Authorities •Businesses •Small businesses •Minority businesses •Home-based businesses

Disaster audiences

•Agriculturists •Agricultural Producers •Large Animal Owners •Small Animal Owners •Boating •Boaters •Marina Owners •Homeowners/Residents •Adults/Families •Coastal Residents •Special Populations •Children (6-13) •Non-English Speakers •Elders •Disabled •Extension •Extension Agents •Employees •Workers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	42831	10310938	0	0
2007	18861	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	17	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Field trials classroom enrichment

Year	Target	Actual
2007	10	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Field trials classroom enrichment
2	Florida citizens participate more fully and effectively in the decision making that affect their communities
3	improved procedures and techniques for managing population growth
4	Improved business environment
5	FAMU-Improve procedures and techniques to retain and expand businesses

Outcome #1

1. Outcome Measures

Field trials classroom enrichment

2. Associated Institution Types

{No Data Entered}

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	

Outcome #2

1. Outcome Measures

Florida citizens participate more fully and effectively in the decision making that affect their communities

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Invasive exotic plant species degrade the health of Florida's natural ecosystems, wildlife, recreation, agriculture, and the economy. In fiscal year 2004-2005 Florida state agencies spent almost $1 billion managing invasive species. When homeowners learn to identify invasive exotic plants and make better plant choices for their yards, they are saving taxpayer money.

What has been done

Palm Beach County Master Gardener and Master Naturalist volunteers play a significant role in homeowner education. This project enhanced the knowledge (on average over 30%) of 28 volunteers in non-native invasive plant identification, control, and prevention through a train-the-trainer workshop

Results

All participants shared their knowledge with the community by volunteering a total of 222 hours (a value of $2,220 based on $10/hour) staffing an invasive exotic pest plant educational exhibit displayed for 17 days at the South Florida Fair in West Palm Beach, January 18 through February 3, 2008. Volunteers reached over 2,000 residents.

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

improved procedures and techniques for managing population growth

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In Florida one of the major factors that is impacting industry and the quality of life within communities is the urban/rural interface. The last four decades of growth in Florida has taught Florida politicians, businesses, and residents many valuable lessons. Among lessons learned is that resource competition and land use conflicts arise when you more than triple the population base. Florida has gone from 529,000 people in 1900 to well over 18 million in 2007. Conflict issues at the rural-urban fringe can be grouped into four categories: lifestyle issues , such as odors, noise, etc.; infrastructure; competition for natural resources; and property rights and wealth distribution (Clouser, 2005).

What has been done

To reduce urban and rural conflicts, Extension provides training for business, industry, Florida residents, government and non-government organizations and regulatory agencies. By provding education on community resource planning and development, natural resource management, sociological and technological change, and public policy conflicts between urban and rural residents are being reduced. One way this is happening is through the training of all new Florida County Commissioners. Florida Extension has the contract to provide this training and certification.

Results

Taught/Presented 32 Local Government Education Programs: Beacuse of space limitations imposed on this entry only a sample of presentations could be entered.1. New Commissioner CCC : Life In The Political Fish Bowl¢€¦A County Commissioner Perspective!2. A ¢€œTypical¢€□ Day In The Life Of A County Commissioner6. Surviving And Thriving As A County Commissioner7. Leading And Governing¢€¦9. Community Visioning And Implementation in Florida's Growth Environment13. The Changing Face Of Levy County: A Look Towards 2030 15. The Changing Face of Madison County: What Is Your Vision for 203017. Levy County Strategic Thinking Part IV 18. You Might Be A Community Developer¢€¦ Florida Cooperative Extension Symposia19. What County Statistics Mean To You ¢€¦ Florida Cooperative Extension Symposia20. County Structure In The Real World, FAC CCC, Mission Inn, Lake County21. Intergovernmental Relations: Other Key Players, FAC CCC, Mission Inn, Lake County22. Kings and Kingmakers and Power Clusters, Florida Forum Advance Leader Training, Mission Inn, Lake County23. County Responsibilities: Airports to Zoos, FAC CCC, Mission Inn, Lake County27. Redirection of the Strategic Plan: Polling Results, FAC Board Retreat, Key Largo28. Growth Management in Florida, FAC Growth Management Workgroup, Orlando30. Policy Issues That Florida Needs to Address By 2030. Florida Forum, Gainesville

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

Improved business environment

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Revitalizing economic depressed communities inclusive of the loss of small businesses to sustain growth resulted in the Florida A&M University Extension Program establishing the ERBDP.

What has been done

This program is designed to provide direct technical assistance for business creation, conduct educational programs that develop and improve upon the professional skills of rural entrepreneurs, and provide outreach and promote USDA Rural Development Programs. ERBDP operates in (4) selected rural counties in North Florida with the greatest economic need: Gadsden, Hamilton, Madison, and Jackson.

This program has increased access and flow of business and economic development information and service delivery in rural north Florida communities by establishing partnerships with faith-based organizations, public and private entities, and using information dissemination vehicle

Results

Most notable during this period, eight business plans were written by ERBDP staff, actual dollars generated by businesses (loans, grants and contracts) totaled $380,100. ERBDP developed a work plan to create community based technical assistance providers and help churches partner with economic and relending entities to receive USDA loan and grant resources.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #5

1. Outcome Measures

FAMU-Improve procedures and techniques to retain and expand businesses

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	48

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Entrepreneurial Rural Business Development Project (ERBDP)-1890.

What has been done

Revitalizing economic depressed communities inclusive of the loss of small businesses to sustain growth resulted in the Florida A&M University Extension Program establishing the ERBDP. This program is designed to provide direct technical assistance for business creation, conduct educational programs that develop and improve upon the professional skills of rural entrepreneurs, and provide outreach and promote USDA Rural Development Programs. ERBDP operates in (4) selected rural counties in North Florida with the greatest economic need: Gadsden, Hamilton, Madison, and Jackson. This program has increased access and flow of business and economic development information and service delivery in rural north Florida communities by establishing partnerships with faith-based organizations, public and private entities, and using information dissemination vehicle.

Results

Most notable during this period, eight business plans were written by ERBDP staff, actual dollars generated by businesses (loans, grants and contracts) totaled $380,100. ERBDP developed a work plan to create community based technical assistance providers and help churches partner with economic and relending entities to receive USDA loan and grant resources.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

In the Healthy Communities program area there were more than 149 activities completed in 2007 to provide solutions to critical needs in this program area. Faculty and staff expended 20104 hours on these programs.As a result, Extension faculty had more than18861 direct clientele contacts. In activities within these programs more than 1276 activity attendees were evaluated and more than 1243 participants showed a knowledge, behavior or conditional change as outcomes to the research-based educational program(s) they attended.Over $ 1208008 dollars were expended in the 1862 portion of this program while FAMU used $ 50000 from state, county and federal sources. This program included both integrated and multistate components.

More than 3272 hours were expended by volunteers in this program area at a value of $ 52,515.60.

Key Items of Evaluation

Safe from storms – Hurricane-related damage, loss of life and insured property loss in Florida since the early 1990s is staggering.In an 18-month period in 2004-2005, Florida suffered an estimated $35 billion in property losses due to hurricanes.IFAS faculty taught the My Safe Florida Home program, established by legislators, to help homeowners find ways to strengthen their houses against hurricane winds.Programs were taught in 12 different counties with 2,188 participants.

Light sensors save money – Pinellas County extension agents worked with county officials to find ways to reduce energy use and costs. County officials plan to install more than 1,000 light sensors in 41 county buildings, lowering thermostats and shutting down buildings during off hours—for a savings of $786,000.

Program #7

V(A). Planned Program (Summary)

1. Name of the Planned Program

Promoting professional development activities designed to enhance organizational efficiency and effectiveness

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
604	Marketing and Distribution Practices	10%	10%	10%	
610	Domestic Policy Analysis	10%	10%	10%	
802	Human Development and Family Well-Being	10%	10%	10%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	10%	10%	10%	
805	Community Institutions, Health, and Social Services	10%	10%	10%	
806	Youth Development	10%	10%	10%	
901	Program and Project Design, and Statistics	10%	10%	10%	
902	Administration of Projects and Programs	20%	20%	20%	
903	Communication, Education, and Information Delivery	10%	10%	10%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	55.0	0.5	0.0	0.0
Actual	8.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
72481	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
607731	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
700368	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Advisory Council44Classroom Enrichment6Clinics4Consultations44County Event17Curriculum Development5Demonstration/Fields Trials1Developing Educational Materials9Developing Partnerships and Collaborations70District Event2Facilitating Groups32Fairs/Exhibits8Field Days1Funding Efforts44Group Teaching Events28In-Service Training49Marketing23Needs Assessment10Program Development73Reporting Results15State/National Event9Working With Media2
Total activities held in 2007 were 496

2. Brief description of the target audience

•Local Government •County Commissioners •County Departments and/or Agencies •County Administration •Cities, Towns, and Municipalities •State Government •Legislators •Legislative Delegation •Legislative Staff •Governmental Agencies •Federal Government •Congressional House & Senators •Congressional Support Staff •Federal Agencies •Faculty and Staff •Extension Specialists •Program Assistants •Clerical Staff •Extension Faculty •Research Faculty •Teaching Faculty •Program Leader, Extension Faculty •Professional Organizations •FAEFCS •NACAA •FAE4-HA •FANREP •FAEP •ESP •Volunteers •Overall Advisory Council/Comittee •Program Advisory Committees •Volunteers for specific programs/projects •Media •Print media •Television •Radio •Benefactors and Donors •Businesses •Foundations •Individuals •Community Organizations •Inter-Governmental Agencies & Organizations •Granting Organizations •Non-Governmental Organizations (NGO) •Service Organizations •Charitable Organizations •501C-3 Organizations •County Fair Boards •State Fair Associations •Neighborhood Associations •Environmental Associations •Farm Bureau •Commodity Groups •Private Industry •Independent Business •Commodity Producer Groups •Agribusiness Enterprises •Students •Graduate students •Undergraduate students •Interns •Public and Private School Students •Florida Educational Institutions •State Universities •Community Colleges •Private Universities •Public & Private Schools •Other University of Florida Entities •General Public •Families •Youth •Individuals •Home Owners

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	64740	65235768	0	0
2007	57256	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	9	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- classroom enrichment

Year	Target	Actual
2007	10	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Conduct meaningful formal and nonformal needs assessment. Design appropriate evaluation strategies for educational programs. Design programs for appropriate ages and stages of development. Increased knowledge of program development, implementation and evaluation. Increased knowledge of program planning for diverse audiences. Increased understanding of cultural norms, values and beliefs. Involve culturally diverse groups in program planning, implementation and evaluation. Write measurable educational program objectives. Adoption of effective volunteer development and management strategies. Ease transition of new UF/IFAS Extension faculty to a new job. Foster open communication and dialogue among new and seasoned UF/IFAS Extension professionals. Increase knowledge of Extension programming methods. Increase knowledge of the role of CES. Increase use of basic skills needed to become an effective Extension educator. Create an awareness of communication and marketing methods for internal and external audiences. Demonstrate the effectiveness of communication and marketing methods. Increase the amount and use of communication among internal and external audiences. Increased confidence in the use of appropriate technology. Increased knowledge of the uses of technology. Integrate technology in educational programming. Demonstrate appropriate leadership skills. Demonstrate appropriate time management skills and use of time management tools and resources. Demonstrate responsible use of available personnel resources such as leave systems, employee assistance, and health programs. Effectively utilize goal-setting strategies as a tool for prioritizing, decision making, and time management. Evaluate program decisions utilizing critical and strategic thinking skills. Set personal priorities inclusive of work, family, and personal goals. Understand and value the role of Extension as a scholarly contribution to the University community. Understand the role of multiple intelligences in program design and delivery. Utilize strategic planning skills in designing long-term Extension programs. Adequate facilities to meet needs of faculty, staff, and clientele Development and implementation of training material Enhance interaction with county administration and county government Enhanced efforts to recruit, hire, train and retain outstanding faculty and staff Enhanced interaction between all levels & divisions of IFAS Enhanced interaction with County Commissioners Enhanced program productivity resulting from Volunteers and Advisory group assistance Improved understanding of UF/IFAS Extension, Research, and Teaching mission Increased dependence by county government on Extension expertise Increased input into faculty program development Increased positive relations and coverage by the media Increasing funding Interaction between DED's, Center Directors, CED's, Department Chairs and UF/IFAS administration Interaction with County Administrators Manage a balanced budget Number of county/state officials trained Orientation of faculty and staff Successful collaboration with other agencies or groups Successful communication with Volunteers and Advisory groups Successful promotion, permanent status and tenure of faculty Successfully meeting County and State expectations
2	Improve competencies of Extension faculty from inservice training
3	Improved competencies of Extension faculty form inserive training

Outcome #1

1. Outcome Measures

Conduct meaningful formal and nonformal needs assessment. Design appropriate evaluation strategies for educational programs. Design programs for appropriate ages and stages of development. Increased knowledge of program development, implementation and evaluation. Increased knowledge of program planning for diverse audiences. Increased understanding of cultural norms, values and beliefs. Involve culturally diverse groups in program planning, implementation and evaluation. Write measurable educational program objectives. Adoption of effective volunteer development and management strategies. Ease transition of new UF/IFAS Extension faculty to a new job. Foster open communication and dialogue among new and seasoned UF/IFAS Extension professionals. Increase knowledge of Extension programming methods. Increase knowledge of the role of CES. Increase use of basic skills needed to become an effective Extension educator. Create an awareness of communication and marketing methods for internal and external audiences. Demonstrate the effectiveness of communication and marketing methods. Increase the amount and use of communication among internal and external audiences. Increased confidence in the use of appropriate technology. Increased knowledge of the uses of technology. Integrate technology in educational programming. Demonstrate appropriate leadership skills. Demonstrate appropriate time management skills and use of time management tools and resources. Demonstrate responsible use of available personnel resources such as leave systems, employee assistance, and health programs. Effectively utilize goal-setting strategies as a tool for prioritizing, decision making, and time management. Evaluate program decisions utilizing critical and strategic thinking skills. Set personal priorities inclusive of work, family, and personal goals. Understand and value the role of Extension as a scholarly contribution to the University community. Understand the role of multiple intelligences in program design and delivery. Utilize strategic planning skills in designing long-term Extension programs. Adequate facilities to meet needs of faculty, staff, and clientele Development and implementation of training material Enhance interaction with county administration and county government Enhanced efforts to recruit, hire, train and retain outstanding faculty and staff Enhanced interaction between all levels & divisions of IFAS Enhanced interaction with County Commissioners Enhanced program productivity resulting from Volunteers and Advisory group assistance Improved understanding of UF/IFAS Extension, Research, and Teaching mission Increased dependence by county government on Extension expertise Increased input into faculty program development Increased positive relations and coverage by the media Increasing funding Interaction between DED's, Center Directors, CED's, Department Chairs and UF/IFAS administration Interaction with County Administrators Manage a balanced budget Number of county/state officials trained Orientation of faculty and staff Successful collaboration with other agencies or groups Successful communication with Volunteers and Advisory groups Successful promotion, permanent status and tenure of faculty Successfully meeting County and State expectations

2. Associated Institution Types

{No Data Entered}

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	

Outcome #2

1. Outcome Measures

Improve competencies of Extension faculty from inservice training

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	112

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In order to remain at the cutting edge it is important for county faculty to have the most up to date research based information in the areas in which they specialize. In particular new faculty needs to feel that they understand whe at they should be doing. Each time a new county faculty member leaves it costs IFAS approximately $70,000 (Higgins, 2006). New Extension faculty also needs to learn the county culture and they do this through the Florida State/County Experience.

What has been done

New Agent training is being redesigned to provide a year-long certified program for new faculty. It is hoped this will increase retension. New State faculty are working with two counties in their areas of specialization so that they learn through this form of training what it is like in the counties. Many new state faculty have had no prior experience working within county Extension offices.

Results

There is an increase in satisfaction among new county faculty. State facutly are providing joint projects with county faculty including website development, curriculum development, training video's and programs etc. In order to do this they must work with the counties for at least a year. All those who have completed the year have completed one to two programs with their host counties showing that they understand the needs and the culture.

4. Associated Knowledge Areas

KA Code	Knowledge Area
901	Program and Project Design, and Statistics
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Improved competencies of Extension faculty form inserive training

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
901	Program and Project Design, and Statistics

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study

Evaluation Results

In the Promoting professional development activities designed to enhance organizational efficiency and effectiveness program area there were more than 496 activities completed in 2007 to provide solutions to critical needs in this program area. Faculty and staff expended 58644.8 hours on these programs.As a result, Extension faculty had more than57256 direct clientele contacts. In activities within these programs more than 2540 activity attendees were evaluated and more than 2505 participants showed a knowledge, behavior or conditional change as outcomes to the research-based educational program(s) they attended.Over $ 1380580 dollars were expended in this program from state, county and federal sources. This program included both integrated and multistate components. More than 3208 hours were expended by volunteers in this program area at a value of $ 51,488.40.

Key Items of Evaluation

Program #8

V(A). Planned Program (Summary)

1. Name of the Planned Program

Natural Resources and Environment--research

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	20%	20%	20%	
102	Soil, Plant, Water, Nutrient Relationships	10%	10%	10%	
111	Conservation and Efficient Use of Water	10%	10%	10%	
121	Management of Range Resources	10%	10%	10%	
122	Management and Control of Forest and Range Fires	10%	10%	10%	
132	Weather and Climate	10%	10%	10%	
133	Pollution Prevention and Mitigation	10%	10%	10%	
134	Outdoor Recreation	10%	10%	10%	
135	Aquatic and Terrestrial Wildlife	10%	10%	10%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	60.0	0.0
Actual	0.0	0.0	22.7	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	617686	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	630692	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	6896748	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conduct Research Experiments •Construct Research Facilities •Partnering

Researchers did studies to find ways to reduce phorphorous from the Florida lake system

2. Brief description of the target audience

Florida taxpayer, Florida residents

Producers, growers, agricultural industry

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2007	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	3

Patents listed

A Semiochemical Reservoir to Attract Subterranean Termites Tunneling in Soil Tissue-Specific Targeting Of Ethylene
Agricultural Soil Amendment (Dolomite Phosphate Rock + N-VIRO)
Improved Turf Quality in Transgenic Grass by Over-Expression of the ATHB16 Transcription

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	115	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

Not reporting on this Output for this Annual Report

Year	Target	Actual
2007	{No Data Entered}	{No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Improving aquatic and terrestrial wildlife in area of ornamental fish industry in Florida
2	Improving Forest and Range Resource management
3	Improved protection of soil from harmful effects of natural elements
4	Protecting and proper management of the Florida Watershed
5	Improved management of Range Resources

Outcome #1

1. Outcome Measures

Improving aquatic and terrestrial wildlife in area of ornamental fish industry in Florida

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A major program area for UF/IFAS TAL has been work toward increasing drug availability for the ornamental fish industry in the state. There are many disease and production needs that require access to legal drugs. Because the incentives for drug companies to invest in aquaculture has been limited, new regulations (including the Minor Use Minor Species Animal Health Act (MUMS Act)) and increased interest in facilitating the process has arisen from governmental, public and private sectors. The FDA currently has exercised 'regulatory discretion' whereby it will not prosecute any producer for use of drugs if it does not feel that there is significant impact on human, animal, or environmental health or safety. However, a changing regulatory climate will make use of drugs and chemicals under this 'regulatory discretion' much less common in the future. In addition, some therapeutic and production related products currently available in other countries are illegal and/or not available in the U.S. Greater access to approved or legally-marketed products will reduce the regulatory stigma placed on our producers, and facilitate greater production efficiency and increased profits. During meetings with producers, legal availability of drugs and chemicals has been a major priority. Work on the value-enhancing production drug, 17-alpha-methyltestosterone for masculinization; a spawning aid, GnRHa + domperidone (Ovaprim); the antibiotic florfenicol, for the control of bacterial diseases; the anti-parasite drug emamectin benzoate (SLICE); and the transport aid metomidate (Aquacalm) has been targeted.

What has been done

One USDA-CSREES-funded project was developed, providing drug effectiveness and target animal safety data to the Food and Drug Administration (FDA) through the INAD process in support of New Animal Drug Approvals (NADA) for metomidate hydrochloride (Aquacalm) as a transport sedative, florfenicol as an antibiotic, and emamectin benzoate (SLICE) as an external parasiticide for ornamental fishes. Current studies have evaluated metomidate hydrochloride with a variety of ornamental species as well as use of florfenicol for control of bacterial diseases in fish. Previous work has

Faculty and staff of the UF-TAL are also providing expertise for a number of drugs with regard to advancement toward 'Indexing,' a new process initated by the MUMS Act for allowing legally-marketed status of specific non-food fish drugs.

Results

Ovaprim (GnRHa) Use as a spawning aid for aquarium fish species--For approximately 7 years, UF/IFAS-TAL has been asked to oversee U.S. commercial ornamental aquaculture use of the FDA-controlled Investigational New Animal Drug (INAD) Ovaprim, a spawning aid produced by Syndel Laboratories/Aquatic Life Sciences. During this time, Ovaprim has been used in dozens of species to aid in commercial scale reproduction. In 2007 alone, Ovaprim was used in over 20,000 individual broodstock of over 15 species and varieties of ornamental fish, resulting in domestic (both Florida and other U.S. producers) livestock estimated to be worth over 20 million dollars farm gate.

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
121	Management of Range Resources

Outcome #2

1. Outcome Measures

Improving Forest and Range Resource management

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Increasing the amount of lumber that Florida is able to produce. Target audience landowners and forest industry.

What has been done

Genetics and traditional breeding of pine trees have resulted in trees that grow 40% faster and are healthier than umimproved varieties that existed in the 1950s.

Results

Today, genetically improved slash pines are now planted on 95% of Florida's reforestation sites, increasing profits for landowners and the forest industry.

4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources

Outcome #3

1. Outcome Measures

Improved protection of soil from harmful effects of natural elements

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In breakthrough research, IFAS scientists discovered a fern that has an amazing ability to soak up arsenic from contaminated soil.

What has been done

. In breakthrough research, IFAS scientists discovered a fern that has an amazing ability to soak up arsenic from contaminated soil.

Results

This fern has become the star player in arsenic remediation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources

Outcome #4

1. Outcome Measures

Protecting and proper management of the Florida Watershed

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Reducing runoff - IFAS scientists have developed new technologies to reduce phosphorus runoff from phosphate mining in Florida.

What has been done

These filter strip technologies are included in new mine reclamation regulations.

Results

Helping the Everglades - IFAS scientists and extension faculty, working with growers in the Everglades Agriculture Area to balance crop needs with the needs of the fragile ecosystem downstream, developed practices that reduced phosphorus runoff into the Everglades by 70 percent.

Protecting South Florida's 'liquid heart' - In response to a steady decline in
one of the nation's largest freshwater lakes, IFAS has partnered with state and federal agencies to protect Lake Okeechobee. Researchers discovered ways to reduce the phosphorus entering the lake, reducing the cost of residue removal, estimated at $3,213 per acre.

Keeping the aquifer clean - Natural and constructed wetlands can be used to filter wastewater before it returns to the aquifer. IFAS faculty have developed plans for constructed wetlands and are studying their effectiveness.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
133	Pollution Prevention and Mitigation

Outcome #5

1. Outcome Measures

Improved management of Range Resources

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Improved forage crops are ways to increase profit and reduce costs.-

What has been done

A new turfgrass variety has insect resistance and slower growth, resulting in grass that needs mowing about half as often as most other turfgrass varieties.

Results

The Aglaonema foliage plant, developed by IFAS scientists, has generated $10 million in sales over the last five years.

4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

Florida has been under a serious economic crisis for almost 8 months. Although to this point Extension programs have been inmost cases able to function, the amount of stress and strain affecting state faculty is evident. Appropriation changes have required pay backs of state funding that are expected to increase and continue through 2009. Problems leading to the the crisis include the mortgage crisis, recession, and a reduction in tourism due to increased gas prices.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

In the Natural Resources and Environment planned research project researchers looked at solutions to problems in the area of soil, water (including conservation and water shed management), forest and range resources, air and general natural resources problems such as those related to aquatic and terrestrial wildlife and weather and climate.

In this area a total of approximately $8 million and 22.7 FTEs were designated for projects to find solutions in the areas of natural resources and the environment.In a state that has over 88 million tourists visiting per year it is critical that what makes Florida unique in the area of natural resources and the environment is preserved and protected. Tourism is the number one economic revenue generator in the state so solutions to issues in this project area are critical to the continued economic health of the state.Agriculture is also directly impacted by projects in this area since both improvements and the development of best management practices in the areas of soil and water are included in this planned project area.

Faculty generated over 115 peer-reviewed articles in this area as well as providing in-service workshops for county and state faculty as well as to industry and governmental agencies. Some examples of highlighted completed water projects and some of their impacts and potential impacts are listed below:

Protecting Florida's Water

Helping homeowners conserve

Improving the Impact of Growth on Water Quality—Northeast Florida is experiencing rapid population growth. In St. Johns County alone, over 70,000 housing units are currently approved for future construction. As the number of housing units, and population continues to increase, the pressure to provide reliable, clean, affordable and sustainable water supplies increases concurrently. Developing effective and easy-to-understand educational programs to disseminate the information accumulated by State Faculty through the County Extension System is a cost-effective and sustainable way to help solve future water shortage dilemma. In order to sustain economic growth and environmental health in St. Johns County, UF/IFAS Extension faculty have developed programs that help homeowners, builders, developers, landscape architects and governmental entities to understand the scope and magnitude we face with regards to our water supplies. Water quality and water quantities continue to be threatened by activities associated with economic growth and development.Statewide, over 50,000 attended Extension generated water quality and conservation activities and programs over the past two years, many of them in leadership roles.

Finding Ways to Increase Potable Water and Reduce Water Contamination –-IFAS research and Extension are problem solvers. Presently we are attempting to develop and teach methods that can reduce the water crisis in heavily populated urban areas. Floridians use more water, per capita, than any other state besides California. In 2000, 16 million people lived in Florida consuming approximately 7.7 billion gallons of water. That translates to 481 gallons of water per person per day. Population projections estimate that by 2020, 21 million people will consume approximately 9.1 billion gallons of water per day. One-third of freshwater withdrawals are for municipal use. Of this amount, 47% to 50% is used for home irrigation. This means it is imperative that we educate residents about their individual and cumulative effects upon water supplies. This is Extensions mission. Sustainable water supplies are already becoming a critical issue in Florida. Presently in the south Florida area water bills (does not include sewerage) range from $35 to $70 per household with costs being approximately $1.50 per 1,000 gallons of water.A recent survey showed that ½ of potable water in south Florida is used for lawn irrigation. IFAS Extension and research have worked closely together to develop research-based best management practices and educational programs to reduce this problem and increase water supplies. Reducing water use in urban areas will increase the amount of water available for agriculture, and accommodate growing populations. One example is the use of rain sensors developed by IFAS research and taught in programs by IFAS Extension. The use of these rain sensors can increase the savings on water by 69% to 92% compared to irrigation watering without sensors. Based on this information for Broward and Dade Counties alone there could be a savings in irrigation costs alone in excess of $331 million dollars and the conservation of 220 billion gallons of potable water annually. When added to management practices developed by IFAS including the best methods of irrigation, the use of drought resistant and/or native plants and other methods of Florida friendly landscape this decrease in water usage becomes even greater. Implementing regulations that require the reduction of water usage and other best management practices recommended by UF/IFAS could significantly reduce costs to Florida's clientele without impacting services as occurs often with tax reductions. Savings could also be used to deal with other problems in these communities such as reducing the 300 million gallons of lightly treated sewage and wastewater presently being dumped into the ocean in the Broward, Miami-Dade and Palm Beach county areas. Irrigation sensoring reduces the amount of wastewater being accumulated. Present costs to correct the dumping issue are estimated by the State Department of Environmental Protection to cost upwards of $2 billion. Using IFAS recommendations to reduce the use of irrigating and other best management practices they have developed for reclaiming wastewater could reduce this $2 million dollar price tag and provide additional water for lawns and cool power plant use.

How homes affect water – A model urban site is being developed by IFAS near Hastings to determine water quality impacts by residential housing.The site will demonstrate low-impact development principles.

Cutting water waste – New IFAS research from Orange, Lake and Marion counties shows that, on average, irrigation accounts for about 50% of total potable water use in Florida homes.Homeowners could reduce by half the amount used to water landscapes by using soil-moisture sensing technology. For example:In 2005, more than 208,000 building permits were issued for single-family homes.If each home's irrigation system had a sensor, water savings would be more than 5 billion gallons a year, and water bills would be reduced by $32 million.

Saving from the start – UF/IFAS extension faculty have developed programs that help homeowners, builders, developers, landscape architects and governmental entities understand how to incorporate water conservation in development and construction.

And saving for the future – IFAS researchers are working with scientists from other institutions to develop climate models for predicting weather in Florida and also to predict water levels in Florida's ground and surface water. They are working on decision-making tools to be used by water managers.

Smarter landscaping – Florida-friendly landscaping programs are being conducted around the state for homeowners, builders, developers, landscape architects, landscape workers and homeowner associations. One success story: One homeowner association in St. Petersburg with 22 waterfront and 51 inland town homes was alarmed at its irrigation costs. County extension faculty provided help and in one year, the average monthly water savings was almost 200,000 gallons. About 2.4 million gallons of drinking water were conserved.

Key Items of Evaluation

Alternative energy – IFAS faculty are working on alternative energy sources such as cellulosic ethanol.Forty percent of Florida's solid waste could be used in this technology which would reduce waste management costs by $351 million, as well as provide a source of cleaner, cheaper fuel.

Working for cleaner water – IFAS research on biogeochemical cycling on phosphorus wetlands ecosystems is now used by state agencies working on restoration and to help mold environmental regulations.Analysis of phosphorus contributors to the Peace River led Department of Environmental Protection officials to revise mine-reclamation regulations to establish vegetative buffers to reduce water pollution.

Helping marine ecosystems, farmers and ranchers –Quantitative information on marine ecosystems is critical to the long-term management of the state's $5 billion coastal marine fishery. IFAS studies guided the millions of dollars of dune restoration by Eglin AFB and other federal, state and county agencies along the Gulf Coast

Program #9

V(A). Planned Program (Summary)

1. Name of the Planned Program

Plants and Their Systems-research

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	10%	10%	10%	
202	Plant Genetic Resources	10%	10%	10%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	10%	10%	10%	
204	Plant Product Quality and Utility (Preharvest)	10%	10%	10%	
205	Plant Management Systems	10%	10%	10%	
206	Basic Plant Biology	10%	10%	10%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%	10%	10%	
212	Pathogens and Nematodes Affecting Plants	10%	10%	10%	
213	Weeds Affecting Plants	10%	10%	10%	
215	Biological Control of Pests Affecting Plants	10%	10%	10%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	156.0	0.0
Actual	0.0	0.0	148.9	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	2872807	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	2901116	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	22354976	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conduct Research Experiments
- Partnering

2. Brief description of the target audience

Florida citizens with an interest in plants and plant science
May include among others:
•growers •producers •general public

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2007	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	19

Patents listed

Tissue-Specific Targeting Of Ethylene Insensitivity In Transgenic Plants
Maltose as a Chloroplast Protective Compatible Solute in Response to Acute Temperature Shock
Materials and Methods for Providing Resistance to Plant Pathogens in Non-Transgenic Plant Tissue
Using a Specially Calibrated Referenced Time-Temperature Integrator Provides Useful Information About Quality of Thermal Handling of Temperature Sensitive Products
Increased Stress Tolerance and Enhanced Yield in Plants
Strategy for Nitrogen Fixation in Non-Legumes
Effects of Juvenile Hormone Analogs on Survival and Reproductive Status of the Glassy-winged Sharpshooter, Homalodisca coagulata
A Method for Transformation of Tomato via Pollen
Carbohydrate Based Cellulase Inhibitors as Feeding Stimulants in Termites
Citrus Tristeza Virus Resistance Genes And Methods Of Use
Materials and Methods for Modulating Seed Size in Plants
Use of Esterase Expressed in Plants for the Control of Gram-Negative Bacteria
Identification of an Oviposition-Deterring Pheromone for Anthonomus eugenii
Materials and Methods for Efficient Alanine Production
Materials and Methods for Efficient Succinate and Malate Production
A Method to Reduce Citrus Fruit Peel Pitting and Senescence
Structure, Synthesis and Activity of the Monoterpene Parectadial
Recombinant Cells that Highly Express Chromosomally-Integrated Heterologous Genes-Divisional OF UF#10414

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	754	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

Not reporting on this Output for this Annual Report

Year	Target	Actual
2007	{No Data Entered}	{No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	New solutions to critical need areas related to plants and their systems will be developed.
2	Improving Integrated Pest Management Systems
3	Improving plant management systems
4	Increasing plan genome, genetics and genetic mechanisms
5	Improving techniques to fight insects, mites, and other arthropods affecting plants

Outcome #1

1. Outcome Measures

New solutions to critical need areas related to plants and their systems will be developed.

2. Associated Institution Types

{No Data Entered}

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	

Outcome #2

1. Outcome Measures

Improving Integrated Pest Management Systems

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need to reduce the need of pesticides and increase the use of integrated pest management systems

What has been done

Solving insect-transmitted plant diseases - IFAS entomologists successfully introduced a parasitic fly from Honduras that kills weevils that destroy Florida's indigenous bromeliads

Results

Successful use of integrated pest management has reduced the lost of bromeliads, a major industry in Florida horticulture and in turn will help preserve the beauty of our state's natural areas.

4. Associated Knowledge Areas

KA Code	Knowledge Area
215	Biological Control of Pests Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants

Outcome #3

1. Outcome Measures

Improving plant management systems

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Winter vegetables - Florida leads the nation in the production of winter vegetable crops such as sweet corn, snapbeans, tomatoes, squash, cucumbers and peppers. Without these crops, American consumers would be buying from other countries.

What has been done

IFAS research and Extension programs have resulted in new, more efficient production of safer food, keeping the Florida winter vegetable industry competitive.

Results

An example is the tomato industry which is adopting efficient irrigation practices, nutrient best management practices, and tomato food safety guidelines.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #4

1. Outcome Measures

Increasing plan genome, genetics and genetic mechanisms

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Improved crops mean higher profits and lower cost.

What has been done

New, more disease-resistant pepper varieties are available and IFAS scientists estimate the pepper industry could realize as much as $60 million in gross returns and use a half-million pounds less pesticide.The Aglaonema foliage plant, developed by IFAS scientists, has generated $10 million in sales over the last five years.

Results

These improved varieties are part of IFAS' crop breeding program, which generates $2 million in royalties each year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
201	Plant Genome, Genetics, and Genetic Mechanisms
205	Plant Management Systems
202	Plant Genetic Resources

Outcome #5

1. Outcome Measures

Improving techniques to fight insects, mites, and other arthropods affecting plants

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Monthly invaders - As the sentinel state for pests, Florida is invaded by at least one new pest every month.

What has been done

IFAS scientists are pioneering the use of the latest molecular techniques and biological-agent containment facilities to combat emerging crop and animal pests.

Results

Without that research, many new diseases such as citrus greening, Raustonia, soybean rust, laurel wilt and pink hibiscus mealy bug, would move unchecked into other states.

4. Associated Knowledge Areas

KA Code	Knowledge Area
215	Biological Control of Pests Affecting Plants
212	Pathogens and Nematodes Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

Florida has been under a serious economic crisis for almost 8 months. Although to this point Extension programs have been inmost cases able to function, the amount of stress and strain affecting state faculty is evident. Appropriation changes have required pay backs of state funding that are expected to increase and continue through 2009. Problems leading to the the crisis include the mortgage crisis, recession, and a reduction in tourism due to increased gas prices.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Plants and their systems

Because temperatures and soil types are so different in Florida compare to other parts of the United States research in the area of plants and their systems are a critical part of the Florida IFAS research initiative. Over 59% of regular hatch dollars are used for plant related research and 35% of Hatch multistate projects concentrate on plant production and/or plant protection. 148.9 research FTEs are assigned to this project and funds from Hatch, matching 1862 funds and others including many grants is at approximately $28.1 million.

In a state with three major ports Florida is estimated to receive one new pest, disease or invasive plant per month. Florida must be vigilante in staying at the cutting edge with research that not only helps solve existing plant related problems but is prepared for those that will eventually reach our shores and could potentially spell disaster for plant production in the state. In 2007 research faculty working in this planned program area produced over 754 peer-reviewed articles that help provide solutions for plant related problems. Areas in which they have been particularly successfulfollow:

Plant diseases

Gadsden County Florida is bigger in tomatoes than most states. In fact, Florida accounts for 65% of the $1 billion value of the U.S. tomato crop. Tomato disease can cut into profits. When bacterial spot, which can cause losses of up to 100% of a crop became and issue researchers had to find out how. It was discovered that the contamination was occurring from irrigation and groundwater and surface water, the first time this had been seen. Within 15 days of targeting the source of the problem researchers met with farmers and came up with a solution—adding a small amount of chlorine to irrigation water reduced prevented the source of the infection and saved the crops. Additional research is still taking place to reduce bacterial wilts and spot.

Citrus Canker is a serious problem that is affecting most states and countries that grow citrus. Florida researchers are working in collaboration with researchers in Argentina and Brazil where canker has been a problem for over 20 years . This interaction has created best management practices for both the grove area an the harvesting and packing plant to reduce and control the spread of this serious threat to the citrus industry.

International collaboration helps in solving citrus greening – Florida citrus growers face citrus greening, a potentially devastating disease.Citrus growers in Brazil have been dealing with the disease longer than Florida producers.IFAS faculty are learning from, and collaborating with, Brazilian colleagues to help the citrus industries in both countries fight the disease.

Plant Stress

Climate change impacts – Studies on rice and sorghum in sunlit, controlled-environmental chambers revealed that elevated temperatures reduced pollen production, pollen viability, seed-set, yield, and harvest index. In addition, rice varieties responded differently to the high temperatures.These studies document the possible negative impact of global climate change – stress on rice and sorghum production.

Plant Genetics

Gene discovery boosts corn yield –A new gene for starch biosynthesis has the potential to triple seed yield in corn.In its quest to develop better corn seed, Syngenta has licensed this technology generated by UF/IFAS scientists.The new hybridseed has higher starch content, which helps the plant get off to a better start, leading to more vigorous plants and greater corn yields.

New cultivars

Tropical peach cultivars have been developed by UF/IFAS researchers and are now being grown around the world. To date Florida has released three new cultivars. It is hoped that this peach varieties can be used to replace some of the agricultural land lost to citrus canker as a new value crop from growers. Researchers see the potential for peaches to move south, spreading to about 10,000 acres eventually, especially with some canker-weary citrus growers showing an interest in peach orchards.

Key Items of Evaluation

Adapting to change – IFAS economists found that urban growth increases the return to agriculture by shifting crops from low-value (those grossing $2,000 per acre such as corn, soybean, hay, pasture, etc.) to high-value crops (those grossing $10,000 per acre such as nursery, greenhouse crops, certain vegetables, specialty crops, foliage plants, etc.). This means agriculture can remain strong, even as Florida becomes more urban.

Finding higher value crops, economic niches –New, higher value crops and those that provide increased nutrition or better return on the dollar are shifting the face of agriculture in many counties.For example, IFAS researchers created a new blueberry variety for Florida to help growers "time" the market by growing berries that ripen in time to reach stores before other producers. The state's new blueberry production industry has now surpassed $40 million in sales. In 2005-2007, UF/IFAS released 44 new cultivars and 33 invention disclosures to help the future of Florida agriculture. IFAS developed the "Festival" strawberry, a global favorite with more than $50 million in sales in three years, not including plant sales.

Improving the flavor of tomatoes– IFAS faculty have isolated the flavor- and aroma-enhancing genes of the tomato, and can now grow tomatoes with enhanced flavor and aroma.This research will help the Florida tomato industry place premium-quality tomatoes in the marketplace.

Improving yield and germination of sweet corn – An IFAS researcher has discovered new genes that enhance starch content of corn seeds.For sweet corn growers, these new seeds mean faster and more complete crop germination.This means greater yields and more uniform maturity, and better quality for the consumer.

Virus-resistant plants – IFAS researchers using biotechnology have produced a tomato that is resistant to begomoviruses, a major pathogen which causes great economic loss.The genetic manipulation results in eliciting a natural defense system in the tomato which lessens the use of pesticides.

Disease resistant grapes –IFAS researchers have used molecular techniques to develop a grape resistant to Pierce’ s disease.This breakthrough will make it possible to grow new grapes in Florida for the table grape and wine industries.

Measuring shifts in agricultural production – IFAS completed an assessment of future prospects for the Florida citrus industry in 2006, aiding industry decision making.Historic economic analysis of individual counties reveals a shift to higher value, less land intensive crops, such as nursery and sod, when urbanization pressures are great.The value of nursery crops increased to more than $15 billion in 2005, due in part to IFAS breeding and research programs.

Program #10

V(A). Planned Program (Summary)

1. Name of the Planned Program

Animals and their Systems--research

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	10%	10%	10%	
302	Nutrient Utilization in Animals	20%	20%	20%	
303	Genetic Improvement of Animals	10%	10%	10%	
304	Animal Genome	10%	10%	10%	
305	Animal Physiological Processes	10%	10%	10%	
307	Animal Management Systems	20%	20%	20%	
311	Animal Diseases	10%	10%	10%	
312	External Parasites and Pests of Animals	10%	10%	10%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	32.0	0.0
Actual	0.0	0.0	30.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	636936	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	627035	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	5232015	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conduct research experiments •Partnering

2. Brief description of the target audience

residents of Florida interested in animals and animal science.This includes
•Growers//Ranchers •Producers/packaging •General public •Government officials •Scientists

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2007	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	2

Patents listed

Volatile Low Molecular Weight Insecticides for control of Medically-Important Insects
Orally-Administered Interferon-Tau Compositions and Methods (con't of 11444)

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	153	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

Not reporting on this Output for this Annual Report

Year	Target	Actual
2007	{No Data Entered}	{No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Improved animal physiological process

Outcome #1

1. Outcome Measures

Improved animal physiological process

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Changing animal waste to energy

What has been done

IFAS scientists have patented new anaerobic digestion technology to convert dairy wastes into methane to produce energy.

Results

Besides producing energy, the system saves valuable nutrients for biofertilizer, cuts greenhouse gas emissions and reduces offensive odors.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
305	Animal Physiological Processes

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Research in the area of animals and there systems is very important to Florida agriculture. This area of research covers both animal production including animal management systems, and animal protection. There are many animals raised in Florida for food and food products as well as for use in leisure time activities such as horses. As of the latest cattlemen's Association survey in 2003 all cattle and calves on Florida farms and ranches totaled over 1.7 million. Nationwide, Florida ranked11th in beef cows, 18th in total cattle and calves and 15th in milk cows. There are also over 500,000 horses in the state. Some animals especially cattle are found on traditional large farms and ranches and some, such as goats are more often found on small farms.

Researchers work with all aspects of animals from animal reproduction and productivity to ways to manage animal nutrients and waste. 30 Research Sys are assigned to this planned program. Federal, state and other funds are close to $6.5 million dollars. Peer-review publications published in 2007 were at 153.Some areas where research has led to better impacts are the following:

Nutrient Best Management Practices (BMPs)

BMPs for Ag – IFAS research and extension programs lead the nation in the development of agricultural nutrient best management practices (BMPs).Several sectors of Florida agriculture either plan to implement, or have implemented, such practices, including dairy, poultry and row crop growers.For row crops alone, this means a potential reduction in nitrogen application between 20 and 30%, leading to reduced groundwater contamination.

Ag and the Environment

Less fertilizer for grazing lands – Bahiagrass is Florida's most abundant crop, with approximately 2.5 million acres in production.Historically, its cultivation used annual inputs of nitrogen, phosphorus, and potassium. As phosphorus has become an environmental concern, nutrient requirements for healthy pastures have been refined.New Extension recommendations reduce acreage receiving annual phosphorus applications by an estimated 80%, meaning increased economic and environmental sustainability for Florida's grazing lands.

Beef cattle, except finishing beef cattle, typically obtain most of their nutrition from forages. There are times, however, beef cattle must receive extra protein and (or) energy nutrition via supplemental feeding. Supplemental feeding is expensive. The use of relatively inexpensive by-products and other non-traditional feedstuffs for supplemental feeding could help to reduce production costs. Trials will be conducted to evaluate the suitability of various by-product/non-traditional feedstuffs (i.e. by-products/substandard products from food manufacturing industry) to provide supplemental protein and (or) energy for beef cattle consuming forage. Results of trials conducted indicated that whole, raw, in-shell peanuts (off grade, oil stock peanuts) are a suitable, easy to feed energy and protein supplement for beef cows. Best usage appears to be 3lbs (1.4 kg) or less per head per day for cows fed grass hay free choice.

Animal reproduction

Advanced in vitro embryo technologies are still quite inefficient due to associated problems with early embryonic loss, large offspring syndrome, and postnatal mortality . The purpose of this project is twofold: 1) to devise rapid methods for assessing viability in preimplantation bovine embryos for increased survival; and 2) determine how in vitro culture conditions effect the expression of Insulin-like Growth Factor (IGF) family members. Methods that improve embryo survival and enhance our ability to assess the embryo's ability to survive will greatly increase efficiencies of the artificial reproductive technologies, namely cloning and in vitro embryo production. Improved efficiencies will reduce costs, making these technologies more feasible for use by cattle producers and allow for increased production of genetically superior animals.

Key Items of Evaluation

Finding Higher value meats with better returns

IFAS research helped lead to the development of the flat iron cut of steak that is now the fifth-best selling cut in the United States with 90 million pounds sold in 2007. This steak outsells T-bone and Porter house steaks combined. Research was conducted after it was identified that the public wanted a leaner more conveneint beef product when other cuts of meat began to decline by more than 20 percent in 1980s and 90s as people became more health conscious. This research was carried out by the University of Florida in cooperation with the University of Nebraska and the cattlemen's association.

Improvement of Beef Cattle in Multibreed Populations

Accurate prediction of genetic values for economically important traits of purebred and crossbred animals is essential to devise appropriate mating and selection strategies in multibreed populations. This project seeks to develop genetic-economic models and procedures to improve mating and selection strategies in national and international multibreed populations under a variety of environmental conditions.

Outcomes of international collaborations: 1) GrowSafe feed efficiency analyses indicated that bulls were more efficient than steers which were more efficient than heifers, Brahman calves were more efficient than Angus, Brahngus, and Angus x Brahman crossbred calves, low residual feed intake (RFI) calves were more efficient and grew faster than medium and high RFI calves; 2) intralocus and interlocus genetic interactions may need to be included in the model for genetic evaluations for growth in some Bos indicus x Bos taurus multibreed populations; 3) redesigned and simplified surveys to collect information on production, management, health, sociological, and economic aspects of dairy farms in Central Thailand; 4) analysis dairy farms in Central Thailand indicated that small farms had higher milk and fat yields, lower bacterial scores, and received higher prices per kg of milk than medium and large farms; 5) increased number of animals and farms that provided data for dairy genetic evaluation, and conducted the 2007 dairy cattle multibreed genetic evaluation for the Data Promotion Organization (DPO) of Thailand; 6) genetic trends for milk yield, fat yield, and fat percent in the DPO population were near zero suggesting that producers are using a variety of criteria to choose sires in addition to EPD, and that high percent Holstein cows failed to reach their production potential under the management, nutrition, and hot and humid climatic conditions of Thailand; 7) selection for growth and carcass traits in a negative halothane gene commercial swine multibreed population (Pietrain sows, Pietrain, Large White, and Landrace boars) reared in open barns in Thailand resulted in lower ages at first estrous and larger hip widths; other traits (birth and weaning weights, shoulder width, body length) remained unchanged; 8) Estimates of differences between cows with non-zero and zero ELISA scores were associated with longer days open, lower ability of cows to maintain weight, and lower calf birth and weaning weights. Potential losses of income due to subclinical paratuberculosis were estimated to be $62.4 for cows with positive ELISA score. Results from this research have had national and international impact. National impacts: The feed efficiency study found that Brahman calves were more efficient than Angus and Angus-Brahman crossbreds suggesting that further research was warranted (genomics, functional genomics). Results from the paratuberculosis study reinforced previous results indicating that subclinical paratuberculosis had measurable negative effects on traits of economic importance in beef cattle, thus research at regional and national levels seems advisable given the potentially large economic impact of this disease. International impact: Development of effective collaboration networks linking researchers across countries. Development of more effective surveys for data collection, larger population samples, and more complete datasets for genetic evaluation in Thailand. Increased involvement in graduate training of international graduate students. Contributed to the maintenance of Criollo cattle as economically viable cattle populations.

Program #11

V(A). Planned Program (Summary)

1. Name of the Planned Program

Food and Non-Food Products: Development, Processing, Quality, and Delivery--research

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	20%	20%	20%	
502	New and Improved Food Products	20%	20%	20%	
503	Quality Maintenance in Storing and Marketing Food Products	20%	20%	20%	
504	Home and Commercial Food Service	5%	5%	5%	
511	New and Improved Non-Food Products and Processes	15%	15%	15%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	20%	20%	20%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	11.0	0.0
Actual	0.0	0.0	10.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	182274	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	166234	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	475637	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conduct research experiments •Partner •Work with stakeholders in processing areas to create and construct research facilities

2. Brief description of the target audience

State, national and international stakeholders affected by food and non-food developing, processing, quality and delivery.These may include but are not limited to:

•producers •regulatory bodies •consumer groups

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2007	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	8

Patents listed

Enhancing the Fragrance of An Article
Enhanced Electrical Contract to Microbes in Microbial Fuel Cells
Ethanol Production in Minimal Medium
Ethanol Production in Non-Recombinant Hosts
Reusable Worker Identification Tags
RFID Tote for Shipment of Pharmaceutical Products
Integrated Multi-Sensor Fruit and Vegetable Robotic Harvesting System
Methyl Jasmonate Decreased Fruit Detachment Force of Grape, Thereby Reducing Mechanical Damage to Berries Caused by Picking.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	51	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

Not reporting on this Output for this Annual Report

Year	Target	Actual
2007	{No Data Entered}	{No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Developing new and improved non-food products and processes

Outcome #1

1. Outcome Measures

Developing new and improved non-food products and processes

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With gas prices continuing to increase and impacting the cost of foods it is important to find new sources of energy.

What has been done

Ethanol research - IFAS scientists are examining crops that could be used in ethanol and biodiesel production.

Results

They're using molecular technologies to develop new cellulosic biofuel crops that are more easily and economically converted to ethanol, an alternative fuel.

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Evaluation Results

This planned program is related to research taking place in the area of food and non-food products and includes the development, processing, Quality and deliver of these products. Areas that Florida deals with includes both food and non-food research. Ten Sys are assigned to this program area and over$824,000 is being use on research projects. In 2007 51 peer-reviewed articles were printed. This program area is expected to become more critical as Florida moves into the area of more advanced research in the area of ethanol and biodiesel productions.

Here is an example of what research is taking place in Florida in this area:

UF/IFAS research biochemists are looking at fish byproducts from unutilized fish processing in an attempt to recover proteins, especially those which are extremely functional and powerful antioxidants.Leftovers from fish processing including bones, heads, fins and chunks of meat left on the bones can be reprocessed to exact protein of a very high purity for human consumption.The technology to isolate and recover the protein has been developed and commercialized so the last step is the take the protein and break it down.With the increased demand on fish stock and the decline of fish this could add a new value product.

Another area in the development of food products is the UF/IFAS Center for Food distribution which will help the nation’s $950 billion retail food industry provide sage and high quality food products at affordable prices. The new center will provide a hub for continuing research in the

Key Items of Evaluation

Remote sensing for fresher food– IFAS researchers are developing remote sensors that can accompany food and medicines during transport and send information in real time.This will allow long distance shipment of fresh fruits and vegetables with less flavor and texture loss.The Department of Defense is moving toward a $4.5 million contract with IFAS to further develop these technologies to help feed troops overseas.

Labor shortages, mechanical harvesting – Labor shortages remain one of agriculture's most intense problems.IFAS is actively working on mechanical harvesting with robotic harvesters as well as better abscission chemicals to assist in fruit release upon ripening.

IFAS researchers are developing robotic harvesters for citrus.These mechanical harvesters rely on computer vision technology to select mature fruits and will be critical for citrus producers faced with the declining availability of hand-harvest labor. Research and extension programs show that citrus growers could save $100 to $300 per acreby converting from hand harvesting to mechanical harvesting and boost their international competitiveness.

Fresher food – The UF/IFAS Center for Food Distribution will help the nation’s $950 billion retail food industry provide safe and high quality food products at affordable prices.The new center is a hub for research and education for the entire food distribution chain—from farm to fork.

Program #12

V(A). Planned Program (Summary)

1. Name of the Planned Program

Economics, Markets and Policy--research

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	10%	10%	10%	
603	Market Economics	20%	20%	20%	
604	Marketing and Distribution Practices	20%	20%	20%	
605	Natural Resource and Environmental Economics	10%	10%	10%	
606	International Trade and Development	10%	10%	10%	
607	Consumer Economics	10%	10%	10%	
609	Economic Theory and Methods	10%	10%	10%	
610	Domestic Policy Analysis	10%	10%	10%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	11.5	0.0
Actual	0.0	0.0	12.6	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	446552	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	438791	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	5469834	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conduct Research Experiments
- Partnering on an international level

2. Brief description of the target audience

international:

•Agribusiness •producers •policy makers (county, state, regional, national, international

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2007	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	64	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

Not reporting on this Output for this Annual Report

Year	Target	Actual
2007	{No Data Entered}	{No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Natural Resources and Environmental Economics

Outcome #1

1. Outcome Measures

Natural Resources and Environmental Economics

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Soil carbon monitoring - Scientists have developed a new method for monitoring soil carbon over time and space, which provides more reliable estimates for agricultural producers who engage in carbon sequestration contracts and carbon trading.

What has been done

. IFAS scientists are working to determine the potential sequestering capacity of Florida farmland and how to produce crops and livestock while maximizing carbon sequestration.

Results

Florida has the highest soil carbon density in the continental U.S. and ranks near the top among all states in its total soil carbon storage.
Quantifying carbon rates - Southern pine forests have among the highest terrestrial carbon sequestration rates in the world - 3.5 tons of carbon per acre per year. Research quantifying these rates is critical as the U.S. begins to participate in carbon offset markets, and Florida forest landowners may benefit economically.

4. Associated Knowledge Areas

KA Code	Knowledge Area
606	International Trade and Development
605	Natural Resource and Environmental Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

Florida has been under a serious economic crisis for almost 8 months. Although to this point Extension programs have been inmost cases able to function, the amount of stress and strain affecting state faculty is evident. Appropriation changes have required pay backs of state funding that are expected to increase and continue through 2009. Problems leading to the the crisis include the mortgage crisis, recession, and a reduction in tourism due to increased gas prices.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Often times the difference between success and failure is related to an understanding of economics, markets and policy. In this planned program Florida UF/IFAS researchers work to stay attuned to changing economics, markets and policies. The research SY count in this planned program area is 12.6 and the total federal, state matching and grants and other funds are over $6.3 million. Since all systems are imbedded in every larger systems that make up the world market it is essential that we understand the impacts they have on each other so that correct prediction or at least better choices can be made when dealing with the local and international market. UF/IFAS researchers work diligently in this area. Some areas where UF research has had some impacts in these areas include:

Economics

Importance of Florida Agriculture to the overall economy—Florida agriculture is not usually visible to the general public, and, as a result, many Floridians are not aware of its importance to our state's economy as the second largest industry in the state following tourism. Florida farmers receive nearly $7 billion in cash receipts for crops and other commodities annually. In addition, Florida agriculture and forestry products have an estimated overall economic impact of more than $62 billion annually. Consumer research conducted for the Florida Farm Bureau showed that less than 10% of the general public understands the economic value or importance of agriculture; only one-third could identify major crops produced in Florida; and a majority do not consider where their food comes from when grocery shopping. More than 40,000 Florida commercial farmers are among the most productive in the world, furnishing the nation with a dependable and safe supply of food, and providing Florida with a stable economic base. Florida farmers annually produce more than 35 billion pounds of food and more than 1.5 million tons of livestock feed. Florida is the nation's ninth agricultural state overall, ranking first in citrus production, and second in the production of vegetables and horticulture products. Interestingly, Florida agriculture is found in most counties with large urban populations such as Orange County. All of the state’s agricultural production is located within two hours of at least one large urban area. This green space helps improve air quality across the state as well as providing a local, fresh, safe and healthy food supply for urban populations.

Policy

Making it all work together – In a world unable to feed itself with adequate or safe foods, IFAS research and extension is working to increase food policy leadership by creating a multidisciplinary forum of experts developing food safety strategies, regional food policy, education and training.

Key Items of Evaluation

High-tech greenhouses – IFAS research shows that production of high-value crops such as fruits and vegetables in high-tech greenhouses boosted yields by 10 times over field-grown crops. The greenhouses recycle water and fertilizer and reduce the need for pesticides.

Program #13

V(A). Planned Program (Summary)

1. Name of the Planned Program

Human Nutrition, Food Safety, and Human Health--research

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
702	Requirements and Function of Nutrients and Other Food Components	20%	20%	20%	
703	Nutrition Education and Behavior	20%	20%	20%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	20%	20%	20%	
721	Insects and Other Pests Affecting Humans	10%	10%	10%	
722	Zoonotic Diseases and Parasites Affecting Humans	10%	10%	10%	
723	Hazards to Human Health and Safety	20%	20%	20%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	**Extension**		**Research**	
	1862	**1890**	**1862**	**1890**
Plan	0.0	0.0	21.4	0.0
Actual	0.0	0.0	20.1	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		**Research**	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
0	0	505289	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	512134	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	5232015	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conduct Research Experiments
- Partnering

2. Brief description of the target audience

•Food Industry •General public •regulatory agencies

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2007	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	5

Patents listed

Escherichia coli B Engineered for Lactic Acid Production
Novel Low Allergenic Food Bar
Proprietary Formulated Ingested or Absorbable Supplement
Method to Design and Utilize Hybrid Peptides Having Antimicrobial Activity

E. coli Strains Engineered to Produce Xylitol from Xylose

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	103	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

Not reporting on this Output for this Annual Report

Year	Target	Actual
2007	{No Data Entered}	{No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Reducing Insects and other pests that affect humans
2	Reduce hazards to human health and safety

Outcome #1

1. Outcome Measures

Reducing Insects and other pests that affect humans

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Ridding human habitat of pests - Of Florida's 250,000 hotel rooms, about 1 percent--or 2,500 rooms--are infested with bedbugs. Treatment requires that adjacent rooms be treated, for a total cost of $6.25 million. Each treated room is out of service for three days, for an additional loss of $1.25 million. Lawsuits for bedbug bites cost $5 million per year.

What has been done

IFAS research has devised a two-hour, non-chemical treatment which doesn't take rooms out of service.

Results

For hotels alone, this treatment will save $5 million.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
721	Insects and Other Pests Affecting Humans

Outcome #2

1. Outcome Measures

Reduce hazards to human health and safety

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

New disease prevention - Dengue Fever has now reached the Carribean and it is only a matter of time before it enters the United States. Because of the international shipping and international air travel Florida is a prime location for the introduction of this serious disease. IFAS medical entomologists are working to prevent introduction of antibiotic resistant dengue fever as well as other vector-borne diseases.

What has been done

IFAS scientists at the Florida Medical Entomology Laboratory developed new computer models that enable predictions of mosquito-borne disease transmissions around the world thus protecting Florida from economically debilitating outbreaks of disease.

Results

A mosquito-borne disease outbreak with 100 to 1,000 cases would severely affect Florida's health infrastructure with an estimated cost to the tourist industry of $100 million. Based on the current budget situation in the state this type of incident would be devastating.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

Florida has been under a serious economic crisis for almost 8 months. Although to this point Extension programs have been inmost cases able to function, the amount of stress and strain affecting state faculty is evident. Appropriation changes have required pay backs of state funding that are expected to increase and continue through 2009. Problems leading to the the crisis include the mortgage crisis, recession, and a reduction in tourism due to increased gas prices.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Human Nutrition, Food safety, and Human Health

Proper nutrition is essential to a better quality of life. Nutrition has a direct affect on many diet related illnesses especially those related to heart disease and diabetes.At the present time obesity is at epidemic levels for both youth and adults across the United States and Florida is no exception. With 88 milliion visitors to Florida each year food safety is another issue that is covered by this goal area.Over $6.2 million has been designated for research in the Human Nutrition, Food Safety and Human Health planned program. Funding comes from federal, state and grants and other funding agencies. Sys for this program are recorded at 20.1. A total of 103 peer-reviewed journal articles have been published by researchers in this area. Some areas of interest in research include the following:

IFAS research on supplement consumption by women led to reduced health care costs by reducing rates of disease neural tube defects.

Food borne Salmonella infections cost this country more than $2 billion in health care costs and IFAS research and extension faculty are actively working with the tomato industry to enhance food safety.

New research and pilot educational programs were conducted last year in 11 counties for participants suffering from diabetes. Behavioral changes by these 156 participants could reduce their medical costs by $1.6 million. The program will be expanded to all 67 counties in the future. Florida's total cost of battling the diabetes epidemic: more than $13 billion.

Mosquito-borne diseases – Florida continues to face great risk from mosquito-borne pathogens, like West Nile, St. Louis and dengue viruses.A mosquito-borne disease outbreak with 100 to 1,000 cases would severely affect Florida's health infrastructure and its tourist industries and cost more than $100 million.Mosquito control in Florida has an estimated annual budget of $160 million. Faculty at the Florida Medical Entomology Lab in Vero Beach provide research and extension information about biology, risk prediction and control technologies for more effective, efficient and environmentally proper mosquito control.

Key Items of Evaluation

Health care cost reductions through science – IFAS research on supplement consumption by women led to reduced health care costs by reducing rates of disease neural tube defects[m1] .Food borne Salmonella infections cost this country more than $2 billion in health care costs and IFAS research and extension faculty are actively working with the tomato industry to enhance food safety.

Developing new cultivars to improve health –

Research is under way toward the development of an allergen-free peanut that would significantly reduce a major health problem affecting as much as 1 percent U.S. population.An additional variety of peanut with high levels of oleic acid was developed and is of increasing economic importance.

Saving money for schools – Since 2004, IFAS has worked in 30 schools in five school districts to reduce the risk of pests and unnecessary pesticide use in schools.That work has led up to $65,000 in savings for each of the school districts by eliminatingunnecessary pesticide treatments.In addition to saving money, districts are limiting school children and staff's exposure to pesticides.

Help for those with diabetes – New research and pilot educational programs were conducted last year in 11 counties for participants suffering from diabetes.Behavioral changes by these 156 participants could reduce their medical costs by $1.6 million. The program will be expanded to all 67 counties in the future. Florida's total cost of battling the diabetes epidemic: more than $13 billion.

Folate for healthier babies– IFAS research showed that pregnant women need higher amounts of folate, a vitamin required for normal fetal development, and research findings led to new recommendations for dietary folate intake for pregnant women.Researchers have also determined that vitamin B12, found only in animal-based food, is limited in the diets of a large percentage of young men and women. Educational programs are being conducted on the B12-folate relationship to encourage behavior changes regarding dietary intake and supplement use.

Solving mosquito-borne diseases –West Nile fever, Dengue fever, Eastern Equine encephalitis and St. Louis encephalitis are allspread by mosquitoes. IFAS faculty from the Florida Medical Entomology Laboratory (FMEL) in Vero Beach have developed methods using water table hydrology, rainfall pattern, and biological factors to predict outbreaks of mosquito-borne diseases in Florida, allowing control measures to be activated beforehand.

Safe food and restaurants– IFAS Extension administers food safety training to all certified restaurant workers in Florida through ServSafe.IFAS research on fresh produce safety has resulted in a statewide program in Good Agricultural Practices (GAPs) training for all farmers in the state.

Speedy detection – Because agriculture is an inviting target for terrorists, UF/IFAS scientists are working with the USDA and other universities to coordinate the National Plant Diagnostic Network, a web-based system designed to speed detection of dangerous diseases and pests.Florida hosts one of four regional hubs that serve 12 southern states and Puerto Rico.

Program #14

V(A). Planned Program (Summary)

1. Name of the Planned Program

Families, Youth. and Communities--research

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	50%	50%	50%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	50%	50%	50%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.2	0.0
Actual	0.0	0.0	7.5	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	134678	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	150341	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	1189094	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

2. Brief description of the target audience

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2007	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	39	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

Not reporting on this Output for this Annual Report

Year	Target	Actual
2007	{No Data Entered}	{No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Increasing positive sociological and technological change affectting individuals, families, and communities

Outcome #1

1. Outcome Measures

Increasing positive sociological and technological change affectting individuals, families, and communities

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Reducing solid waste - Each person in Florida generates one to two tons of solid waste a year.

What has been done

Extension and research have developed programs to support regional planning to enhance science-based education to local governments, waste generators, and landowners regarding sustainable land application of non-hazardous wastes.

Results

Reducing solid waste by just 10 percent, based on the present population could save Florida $114 million in solid waste processing and would improve groundwater using these research-based programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families and Communities

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

Florida has been under a serious economic crisis for almost 8 months. Although to this point Extension programs have been inmost cases able to function, the amount of stress and strain affecting state faculty is evident. Appropriation changes have required pay backs of state funding that are expected to increase and continue through 2009. Problems leading to the the crisis include the mortgage crisis, recession, and a reduction in tourism due to increased gas prices.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

The research planned program includes research projectsin the area of Individual and family resource management; Human development and family well-being; Sociological and technological change affecting individuals, families and communities; Human environmental issues concerning apparel, textiles and residential and commercial structures; Community institutions, health, and social services; and youth development. At this time there are 7.5 Sys assigned to this program area with funding for research at $1.4 milliion. An example of a youth research project now taking place in Florida follows:

This research examines factors that promote educational achievement among rural America's children. Rural students have higher dropout rates and lower scores on standardized achievement tests than do urban students. Furthermore, relatively little is known about the educational experiences of younger rural students. We employ a `social capital' framework to uncover how the character of relationships affects children's learning. These include parent-child and other adult-child relationships in the family, schools (e.g., teacher-student) and outside schools (e.g., scout leader-member). We will explore how family social capital influences educational outcomes of rural elementary school students, how social capital in the school and community influences achievement among students with varying levels of family social capital, and how its affects might persist.

Researchers who attended the 2007 conference presentations learned that analyses of the test scores show that children who attend a school in rural and limited resource communities are disadvantaged at entry into kindergarten and this gap increases through the fifth grade. Researchers working with policy makers can use this information to target programs to better meet the needs of rural students. In addition, the earlier studies showing that children from non-English speaking households in rural America are particularly at risk for starting ou behind their peers and are unlikely to catch up in the near term can be used to target programs to better meet the needs of these students. Finally, other researchers, policy makers, and the general public learned about the rural-urban gap through the posting of initial research results on the Population Reference Bureau's web site under 'Rural Children Lag in Early Childhood Educational Skills' in 2003.

Key Items of Evaluation

'Next generation' programs–IFAS researchers are working with "high-at-risk" youth in Bradford and Polk counties and through the life skills training of 4-H, have demonstrably improved youth participation in recreation, school connectedness, and have increased student self-respect and respect for parents.