

**V(A). Planned Program (Summary)**

**Program # 1**

**1. Name of the Planned Program**

Global Food Security and Hunger

**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	5%	5%	0%	
111	Conservation and Efficient Use of Water	5%	5%	0%	
132	Weather and Climate	5%	5%	0%	
133	Pollution Prevention and Mitigation	5%	5%	0%	
136	Conservation of Biological Diversity	5%	5%	0%	
141	Air Resource Protection and Management	5%	5%	0%	
201	Plant Genome, Genetics, and Genetic Mechanisms	5%	5%	0%	
204	Plant Product Quality and Utility (Preharvest)	5%	5%	0%	
205	Plant Management Systems	5%	5%	0%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	5%	0%	
212	Pathogens and Nematodes Affecting Plants	5%	5%	0%	
213	Weeds Affecting Plants	5%	5%	0%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%	5%	0%	
216	Integrated Pest Management Systems	5%	5%	0%	
307	Animal Management Systems	5%	5%	0%	
315	Animal Welfare/Well-Being and Protection	5%	5%	0%	
402	Engineering Systems and Equipment	5%	5%	0%	
405	Drainage and Irrigation Systems and Facilities	5%	5%	0%	
502	New and Improved Food Products	5%	5%	0%	
603	Market Economics	5%	5%	0%	
	<b>Total</b>	100%	100%	0%	

**V(C). Planned Program (Inputs)**

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	80.0	3.0	0.0	0.0
Actual	126.1	11.0	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
1345863	739158	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1345863	739158	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1345863	739158	0	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Activities within this program are supported by Extension education in ways that boost Florida agricultural production while also improving the global capacity to meet the growing food demand. These educational activities also provide innovative components to fight hunger by addressing food security for vulnerable populations both in the state and across the world.

**2. Brief description of the target audience**

- General public
- Producers
- Ranchers/Farmers
- Ag Industry
- Families
- Youth

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	380000	6000000	0	0
Actual	1816563	3419393	0	0

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

Year: 2010  
Plan: 0  
Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

<b>2010</b>	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>	100	0	
<b>Actual</b>	275	0	275

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- {No Data Entered}

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Change in Knowledge Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources
2	Change in Behavior Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources
3	Change in Condition Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources
4	Change in Knowledge Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global
5	Change in Behavior Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global
6	Change in Condition Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global
7	Change in Knowledge Processing, Distribution, Safety and Security of Food Systems
8	Change in Behavior Processing, Distribution, Safety and Security of Food Systems
9	Change in Condition Processing, Distribution, Safety and Security of Food Systems
10	Change in Knowledge Protecting Florida from Existing and Emerging Pests and Diseases
11	Change in Behavior Protecting Florida from Existing and Emerging Pests and Diseases
12	Change in Condition Protecting Florida from Existing and Emerging Pests and Diseases
13	Change in Knowledge Bio-energy -- Sustaining and Fueling Florida
14	Change in Behavior Bio-energy -- Sustaining and Fueling Florida
15	Change in Condition Bio-energy -- Sustaining and Fueling Florida
16	Change in Knowledge of agricultural and natural resources that provides the fundamental steps toward the capacity building of sustainable rural Florida small farm
17	Change in behavior that has increased production, marketing skills and farm management skills within a socially disadvantaged minority population.

## **Outcome #1**

### **1. Outcome Measures**

Change in Knowledge Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources

### **2. Associated Institution Types**

- 1890 Extension

### **3a. Outcome Type:**

Change in Knowledge Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2010	100	0

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

NEW & BEGINNING FARMER PROGRAM

FAMU: Florida farmers entering agriculture face challenges, including high land prices, increasing equipment costs, and government subsidy payments predominantly delivered to larger, more established farmers.

#### **What has been done**

. FAMU's New & Beginning Farmer Program is designed to reduce barriers to farm-entry and improve the likelihood of success. The goal of the program is to use the basic business development model and apply it to agriculture operations; thus, tying business and marketing skills to agriculture, making it a seamless endeavor and increase the likelihood of economic profitability.

#### **Results**

The program conducted over 40 intensive, hands-on training activities with youth and adult beginning farmers. 55 adult and youth beginning farmers improved knowledge alternative crop production and management, irrigation, food safety, value-added processing, market development and distribution logistics through on-farm and on-station crop production demonstrations.

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water

205	Plant Management Systems
307	Animal Management Systems
603	Market Economics

**Outcome #2**

**1. Outcome Measures**

Change in Behavior Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2010	100	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Reducing the spread of Palmer amaranth. Palmer amaranth populations have been steadily increasing for the last 3-4 years. Many of these populations are resistant to glyphosate, ALS-inhibiting herbicides, or both. One program, headed by Jason Ferrell, has attempted to address the issue in 3 ways. 1. Develop herbicide programs that will be effective, regardless if herbicide resistance is present, 2. Provide information to county faculty and stakeholders about the importance of identification and early intervention and, 3. Determine to what extent these populations are resistant and to which herbicides.

**What has been done**

- ?EDIS publications (short, peer-reviewed documents published in-house, online).
- ?New faculty orientation and other In-service trainings.
- ?Presentations at producer meetings.
- ?On-farm visits and field days.

**Results**

The majority of the current Palmer amaranth infestation is in the central panhandle, but is moving westward each year. Although the population in Escambia county is not yet severe (poling shows that 50% of crop producers have Palmer amaranth on less than 5% of their acreage), 70% of respondents indicated that they are preemptively employing management programs to reduce the spread of this weed. This indicates that producers are aware of the threat and have adopted a

proactive management strategy.

Secondly, FDACS has been made aware of the threat of this weed. This program helped develop an action plan detailing a new way to apply herbicides in Palmer amaranth infested peanuts. Though not previously labeled in this manner, FDACS granted a 24C (special local needs) pesticide label for selective application of Gramoxone Inteon. This provides the only way to manage larger Palmer amaranth that is present late in the season, prior to peanut harvest.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
205	Plant Management Systems
213	Weeds Affecting Plants
603	Market Economics

#### Outcome #3

##### 1. Outcome Measures

Change in Condition Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources

##### 2. Associated Institution Types

- 1862 Extension
- 1890 Extension

##### 3a. Outcome Type:

Change in Condition Outcome Measure

##### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	0

##### 3c. Qualitative Outcome or Impact Statement

###### **Issue (Who cares and Why)**

Bahiagrass is the most common and widely used warm-season perennial grass in Florida. This grass is popular because of its adaptation to low soil fertility and low input management. However, forage production declines in summer as day length shortens ? triggering the plant into reproductive development. This shift reduces available grazing for pasture animals. The Forage Breeding program at UF in conjunction with the Forage Management program tested, developed, and released the improved cultivar ?UF Riata?. This cultivar is less sensitive to day length, cool temperatures, and certain diseases. UF Riata allows forage production to continue well after other bahiagrass cultivars decline in productivity as they enter the reproductive phase.

Additionally, UF-Riata is less cold sensitive than other cultivars allowing grazing to begin earlier in the spring and later in the fall. All these traits combine to lengthen available grazing throughout the season, making the system more profitable.

#### **What has been done**

?Increase the number of county faculty and stakeholders that adopt the use of the new cultivar bred for extended growth in the spring and fall, together with the management for production of this new cultivar.

?Increase the number of county faculty recommending the new option for bahiagrass when additional production is desired in the fall and early spring.

?Increase the number of commodity stakeholders that use the new cultivar and the management required for sustained and long term production and survival.

#### **Results**

UF Riata is a novel cultivar and is the first bahiagrass that brings extend forage production during the critical period for livestock production. As with any new cultivar, seed is initially limited. But UF-Riata has been enthusiastically accepted by producers. Since its release, all available seed has been sold out each season. This fact indicates that producers have embraced this new bahiagrass cultivar. Research reports indicate that UF Riata will consistently produce 10-25% more biomass than other bahiagrass cultivars. Additionally, UF Riata has shown to have forage quality similar to other bahiagrasses, so no penalty is observed from utilizing this new forage cultivar. UF Riata is still a relatively new release and it is currently difficult to determine the level of savings gained from implementation of this forage. However, it is hypothesized that feeding of conserved forages (hay, winter grazing, etc) can be reduced by 1 month if UF Riata is implemented. This translates into a considerable time and economic saving for cattle producers.

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
132	Weather and Climate
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
307	Animal Management Systems
502	New and Improved Food Products
603	Market Economics

#### **Outcome #4**

##### **1. Outcome Measures**

Change in Knowledge Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global

##### **2. Associated Institution Types**

- 1890 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2010	100	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

FAMU: Access to profitable markets is perhaps the single most influential factor in determining the viability of small-scale, particularly limited resource, farms. Limited resource farmers in Florida have historically had limited access to viable and profitable markets, often resulting in low prices for products and decreased profitability of farm operations.

**What has been done**

Farm to School is designed to introduce schools as an alternative market opportunity for small farmers. Schools can prove remunerative, and serve as a stable and consistent market for small-scale producers because of the size of the population served seldom vary significantly and set menus are served at regular intervals. Group education sessions and hands-on training demonstrations were conducted with small farmers.

**Results**

. Over thirty farmers improved knowledge in incorporating schools as markets for their farm operations. 50 people improved knowledge of food safety and insurance liability requirements related to marketing to schools. Five participating small farmers incorporated schools as alternative market for locally/ regionally grown fruit and vegetables.

Thirty (30) school food directors/personnel from twenty-two (22) Florida school districts received training in developing Farm to School efforts.

Three (3) farmers participating in on-farm demonstration training activities produced total of 8 acres of green beans used for Farm to School marketing pilot for thirteen Florida school districts.

Two (2) strawberry producers piloted strawberries in one school district in FL and two school districts in AL.

Thirteen Florida (13) school districts, serving 300,000 school children, improved nutritional value of school meals due to incorporating local and regional fresh produce; schools purchased approximately 100,000 lbs. of fresh produce grown by small and medium-sized farmers.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
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502 New and Improved Food Products  
603 Market Economics

## **Outcome #5**

### **1. Outcome Measures**

Change in Behavior Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global

### **2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2010	100	0

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Improved marketing and bookkeeping skills can have a direct impact on financial security.

#### **What has been done**

In one program 128 small farmers attended a program on product marketing.

#### **Results**

100% of participants learned at least one new technique for marketing their product as indicated by the exit survey. 100% responded on the follow-up survey indicated use of a new marketing strategy for their operation, if products were involved in their operation to date of the survey; Success story: One participant in the spring 2010 class said she had networked with other participants and found this very valuable. She had attended an additional class by NRCS, one of the participants farms and had updated to a newer version of Quickbooks based on information from the training. She had also learned about new marketing opportunities that she is implementing with her berry business.

### **4. Associated Knowledge Areas**

**KA Code**    **Knowledge Area**  
603            Market Economics

## **Outcome #6**

### **1. Outcome Measures**

Change in Condition Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global

Not Reporting on this Outcome Measure

## **Outcome #7**

### **1. Outcome Measures**

Change in Knowledge Processing, Distribution, Safety and Security of Food Systems

### **2. Associated Institution Types**

- 1890 Extension

### **3a. Outcome Type:**

Change in Knowledge Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2010	100	0

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

FAMU: Florida A&M University (FAMU), Cooperative Extension Program spearhead the first National Goat Conference in the U.S. in 2010 which has now become an 1890 initiative. Over 475 participant attended from across the nation and beyond.

#### **What has been done**

The conference attendees included goat and sheep producers, agricultural professionals, community-based organizations, and state and federal agencies. International guests included participants from the Bahamas, Trinidad, and St. Vincent and the Grenadines. According to the conference survey, 38% of the attendees were African-Americans, 38% were white of European Ancestry, 6.61% were white Hispanic, 4.96% were African, 4% were Caribbean Black, 2.48% were Asian, 2.48% were Native American while 1.65% identified themselves as Black Hispanic. Thus, 62% of the conference participants were minorities. The data strongly suggests that in order to increase minority participation in training activities of this nature, 1890 universities must be involved.

#### **Results**

The survey also revealed that 76% of the small ruminant producers earn \$5,000 or less from their farm business. The results indicate that the producers that attended this conference require further assistance to improve their economic well-being. Eighty-four percent to 89% of the participants at the conference ranked the animal nutrition, marketing, pasture management, and herd health sessions as either very important to extremely important while 61.57% found food safety very important or extremely important. Furthermore 74.78% (combined percentages from very confident or extremely confident) of the producers were confident that they will be able to apply the knowledge they gained at the conference on their farm while only 1.80% were not confident that they would be able to apply what they learned on their farm. The data further showed that the educational information met the needs of most individuals that attended the conference.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
315	Animal Welfare/Well-Being and Protection
405	Drainage and Irrigation Systems and Facilities
502	New and Improved Food Products
603	Market Economics

#### Outcome #8

##### 1. Outcome Measures

Change in Behavior Processing, Distribution, Safety and Security of Food Systems

##### 2. Associated Institution Types

- 1890 Extension

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	475

##### 3c. Qualitative Outcome or Impact Statement

###### **Issue (Who cares and Why)**

In 2010, 276 small farm producers, including those new to farming or interesting in expanding their farm operation by starting a new farm enterprise attend five extension programs that provided knowledge and skills in alternative crop production, muscadine grape production, nematode pest control option and pesticide-use and safety to better manage their farm business

operation and the environment. These support NIFA's priority focus areas in Global Food Security and Hunger, Climate Change, and Food Safety.

**What has been done**

New farm crop (alternative enterprise) start-ups by beginning farmers, those that are new to farming or existing farmers provides consumers with more choices, selection and availability fresh fruits and vegetables in the market.

Proper cultural practices for Muscadine grape help to maintain the growth and development of fresh fruit and wine industry.

**Results**

Fifty-eight participated in the Muscadine Grape Culture program that provided growers, hobbyist, and grape enthusiast production and pruning practices.

Fifty-eight participants gained knowledge and skills related to Muscadine grape culture, specifically relating to pruning of young, mature, and older grape vines.

Thirty-eight gained knowledge and production techniques needed to begin a new farm operation or alternative enterprise relating to Satsuma, cut flower, aquaculture, collard greens and vegetable production. Other topics included marketing, farm to school, and small ruminant grazing systems.

Seventy-five percent said that the program has increased their economic return/profitability

Another 75 % said that because of this program it has created the ability to improve their community sustainability without damaging future generation's ability to provide for themselves.

Two farm clientele were assisted in the development of a farm management plan, one for blueberries and one for Satsuma production, in 2010.

Fifty participants gained knowledge and skills on practices to lower the risk and exposure of pesticides to the environment.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
205	Plant Management Systems
213	Weeds Affecting Plants
502	New and Improved Food Products
603	Market Economics

## **Outcome #9**

### **1. Outcome Measures**

Change in Condition Processing, Distribution, Safety and Security of Food Systems

### **2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

### **3a. Outcome Type:**

Change in Condition Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2010	100	0

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Pesticide use can lead to serious health issues as well as affecting the environment adversely. For this reason it is important that professionals and those who handle pesticides be properly certified. Those who are certified also often find that having the certification can increase their income. According to the department of health and human services poverty guidelines a household with 3 members with an annual income of \$18,310 is considered under the poverty level.

#### **What has been done**

One county in Florida oversees the certification process for those doing pesticide application.

#### **Results**

In this county in 2010 a total of 37 professional landscapers in one training took the pesticide test for the limited commercial certification landscape maintenance. A telephone survey was conducted to measure the salary economic impact of 17 hispanic certified applicators. Of these 17, 7 had an increase in pay of \$1.18 cents per hour which represents \$2,254 more per year for each person. In another training, 9 certified applicators that completed their requirements for certification under Extension training moved from \$19,104 annual salary to \$24,672 bringing them well above the poverty level. These certified applicators do a better job of protecting the community environment because they now use correct methods of application and the increase in salary also benefits the community.

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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133	Pollution Prevention and Mitigation
136	Conservation of Biological Diversity
216	Integrated Pest Management Systems
603	Market Economics

**Outcome #10**

**1. Outcome Measures**

Change in Knowledge Protecting Florida from Existing and Emerging Pests and Diseases

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2010	100	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Because of tropical weather conditions dairy sanitation and health of herds can be an issue.

**What has been done**

Specialists and county faculty have been working iwth the increasing numbers of smaller dairies in the state to improve sanitation and herd health.

**Results**

With the increase in smaller grazing dairies in the state state and county faculty have been working with smaller grazing dairies and have addressed the problems with milk quality and sanatition on these dairies as well as ways to reduce the effects of heat stress by using shade and modifying irrigation sprinklers to cool the cows without creating muddy pastures. Muddy pastures can increase the occurance of mastitis and effect milk quality and quantity. These BMPs increase both herd health, sanitation and economic stability which in turn effects the county tax revenue, the environment and human health which can be impacted by animal sanitation issues.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
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- 307 Animal Management Systems
- 315 Animal Welfare/Well-Being and Protection
- 502 New and Improved Food Products
- 603 Market Economics

**Outcome #11**

**1. Outcome Measures**

Change in Behavior Protecting Florida from Existing and Emerging Pests and Diseases

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2010	100	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Tropical soda apple (TSA) is a serious weed problem in many perennial grass pastures of Florida. Having foliage unpalatable to livestock and highly viable seed, this noxious weed can infest a pasture or native land within 1 to 2 years resulting in lower stocking rates (animals per acre). Geographically, the incidence of this plant in Florida has been highest in the south though it has been observed throughout the entire state and has spread outside of Florida to other southern states. TSA has been observed as a weed in pastures, ditch banks, citrus groves, sugar cane fields, vegetable fields, and rangeland. It is spread by humans and animals, and appears to be restricted to semi-disturbed sites. TSA flowers and produces fruit throughout the year though it is concentrated from September to May. One plant will produce 40,000-50,000 seeds with seed germination ranging from 75%-100%.

**What has been done**

Educational methods included presentations on TSA biology and management, publications, posters, brochures, institutional websites, photographs, descriptions of best management practices, training in releasing the beetles, online courses, multimedia presentations, identification guides, and biological control manual. Polycom® has been particularly useful for distance delivery of information to large audiences at a statewide level. Typically, speaker presentations were delivered using PowerPoint format.

**Results**

Demonstration of the population level effects of the beetle, *Gratiana boliviana*, on tropical soda apple provided clear evidence of the effectiveness of biological control. *Gratiana boliviana* reduced the density of TSA after one year from the time of release. For example, the initial density of TSA at a site was 10 plants per 40 square feet; however, after one year, only two plants were found in the same area. In another area, density of TSA was 4-5 times higher at one of the locations than at the other three sites, but within three years, TSA density at the high density site had declined 90%. Beetle populations increased in numbers during the spring and summer severely damaging the plants. In the fall, as temperatures cooled and day-length shortened, the beetles entered a dormant stage and populations decreased until the following spring. Because populations of TSA continued to increase in the southeastern United States, it was imperative for Extension Specialists and Agents to assist in preventing the spread of TSA within and across the Florida border. Although the movement of TSA seed by wildlife cannot be prevented, it helped to restrict the movement of TSA seed by cleaning all equipment when leaving an infested pasture. Extension demonstrations have served to assure decontamination of vehicles, mowers, tractors, clothes, and shoes. Cattle also transport TSA seeds, so Livestock Agents instructed ranchers to ship cattle from areas that do not have TSA or are TSA-fruit free. Mowing a TSA-infested pasture prior to shipping eliminated the fruit and the consumption of TSA seed by the cattle. The TSA seed can remain viable in the digestive tract for up to six days. Therefore, Livestock Agents informed buyers of cattle to hold them in one area for up to six days to avoid the spread of TSA. Large areas of Florida will be TSA-free, thus providing more usable rangeland for grazing cattle. The economic impact of TSA on Florida grazing land ranged from \$6.5 to \$16 million annually. This impact has been reduced substantially.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
216	Integrated Pest Management Systems

#### Outcome #12

##### 1. Outcome Measures

Change in Condition Protecting Florida from Existing and Emerging Pests and Diseases

Not Reporting on this Outcome Measure

#### Outcome #13

##### 1. Outcome Measures

Change in Knowledge Bio-energy -- Sustaining and Fueling Florida

Not Reporting on this Outcome Measure

**Outcome #14**

**1. Outcome Measures**

Change in Behavior Bio-energy -- Sustaining and Fueling Florida

Not Reporting on this Outcome Measure

**Outcome #15**

**1. Outcome Measures**

Change in Condition Bio-energy -- Sustaining and Fueling Florida

Not Reporting on this Outcome Measure

**Outcome #16**

**1. Outcome Measures**

Change in Knowledge of agricultural and natural resources that provides the fundamental steps toward the capacity building of sustainable rural Florida small farm

**2. Associated Institution Types**

- 1890 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

FAMU: A key issue within global agricultural research and development is the need to positively focus on the sustainable development of small farmers, resource poor farmers and their families. Though these farmers make up about 90% of the worlds farmers, generally they have not had equal access and participation in programs and training designed to assist large producers and agribusiness. The 2007 USDA Census suggested that approximately 91% of all farms in the United States are small farms- an increase from previous census.

**What has been done**

Developed and implementing the FAMU Statewide Small Farm Programs. FAMU Statewide Small Farm Programs is an active participatory capacity building program - designed and to assist and equip farming populations and their families toward a sustainable development. The Program uses a holistic, participatory, multidisciplinary, systems approach to provide relevant educational opportunities, technical information and hands-on training to underserved rural and urban farming populations and their communities.

## **Results**

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
132	Weather and Climate
133	Pollution Prevention and Mitigation
136	Conservation of Biological Diversity
141	Air Resource Protection and Management
201	Plant Genome, Genetics, and Genetic Mechanisms
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
307	Animal Management Systems
315	Animal Welfare/Well-Being and Protection
405	Drainage and Irrigation Systems and Facilities
502	New and Improved Food Products
603	Market Economics

### **Outcome #17**

#### **1. Outcome Measures**

Change in behavior that has increased production, marketing skills and farm management skills within a socially disadvantaged minority population.

#### **2. Associated Institution Types**

- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

FAMU: The Situation: The majority of socially disadvantaged minorities, especially those classified as beginning farmers and ranchers, lack the basic production, marketing and farm management skills, required to build sustainable farm enterprises.

**What has been done**

•Expansion of clientele: We have added the following counties in order to serve a wider audience: Jackson, Escambia, Washington, Gadsden, Leon, Manatee, Sarasota and Charlotte.  
 •Development of information resources for continuing outreach activities and information dissemination: Informational resources (Websites, printed hand-outs, PowerPoint presentations, on-farm demonstrations & hands-on training/assistance have been developed and are being utilized for training & outreach purposes.

**Results**

1. Seventy five (75) new participants (including 40 youth) have been trained in hands-on in production, value-added processing, market development and distribution techniques.
2. Ten (10) youth have started agricultural business ventures (production, value-added processing and marketing)
3. An increase in farm output and profits over previous years. Approximately 300 dozen of collards are now being produced per acre. At a market price of \$10/dozen, individual farmers are realizing earnings of \$2,500 per

A visible change in attitudes

4. One African-American owned chain store has developed as a result of our outreach activities.
5. Four (4) new school districts incorporating salad mixes, fresh cut beans and collard greens into their school meal programs.
6. A majority of participants have shown optimism and enthusiasm with regards to their businesses. More energy is now being directed towards their farming operations. For example, participants are also taking the initiative to identify their own markets rather than waiting for markets to be identified for them.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
502	New and Improved Food Products

603 Market 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 Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

### **Brief Explanation**

Florida is presently being affected by the economic issues plaguing the world. There are also public policy changes, government regulations and reduced appropriations affecting Extension and the land-grant university as a whole. There are competing programmatic challenges and the general public tired from years of stress and uncertainty are also reacting negatively as they try to save their jobs and homes. Florida has also been told to expect another 3 to 6% reduction in legislative funds and as counties are also being cut back by the state it is expected that IFAS and especially Extension will be seriously impacted.

## **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**

Florida's agriculture and natural resources industries comprise a wide array of economic activities, including commodity production, food and kindred product processing/manufacturing, wholesale and retail distribution, and associated input suppliers and support services. Some of the major commodities produced are fruits, vegetables,

livestock, meat and dairy, forest products, ornamental plants, seafood, and sugar. In addition to farms, forests and fisheries, the industry includes allied activities such as mining, fertilizer manufacturing, sawmills, fruit and vegetable processing, landscaping, food stores, restaurants, building material & garden stores, pest control, golf courses and recreational fishing.

The total economic impacts of these industry sectors on the Florida economy were estimated using a regional economic model, which captures the multiplier effects of the input supply chain and employee household spending (Hodges, Rahmani and Mulkey, 2008, <http://edis.ifas.ufl.edu/fe800>). In 2007, these industries in Florida collectively...

- Produced \$128 billion in output or sales revenues (expressed in 2008 dollars), and generated \$60 billion in revenues for other economic sectors due to supply chain and employee spending (multiplier effects), thus providing nearly \$188 billion in total output impacts.
- Had foreign and domestic exports and sales to Florida visitors valued at \$45 billion.
- Generated \$59 billion in value added (personal income and business profits), which represented 8.2 percent of the Gross State Product of Florida (\$716 billion), and including multiplier effects had total value added impacts of \$93 billion.
- Provided direct employment of 1.37 million fulltime and part-time jobs, representing 13.3 percent of all jobs in the state, ranking second among major industry groups, and generated total statewide employment impacts of 1.87 million jobs, and labor income impacts of \$61 billion.
- Generated indirect business taxes paid to local, state and federal governments of \$10.5 billion.

The economic benefits of agriculture/natural resources are felt at local, state and international levels. In some rural counties, agriculture is the largest component of the economy. Much of Florida's agricultural products are exported outside the state, which brings new money into the regional economy, giving rise to economic multiplier effects. These industries remain a dynamic part of the economy, with value added impact growing at an average annual growth rate of nearly 4 percent since 2001. In addition, these industries managed nearly 24 million acres (36,000 square miles) in forests, crops, and pasture land uses, or about two-thirds of the state's land area. These lands provide valuable non-marketed environmental services for water supply, water quality improvement, pollution abatement, erosion control and shoreline protection, carbon sequestration and climate stabilization, wildlife habitat, and open space for community buffers and outdoor recreation

In spite of the important contributions of agriculture/natural resources to the state's economy, environmental and social well-being, a large and growing number of Florida residents and visitors are unaware of its contributions. Focus groups conducted by the Center for Public Issues Education indicate that many consumers in Florida have widely divergent and inconsistent understanding of common terms used to describe agriculture and food systems. This lack of awareness leads to policy decisions that may inhibit the industry's ability to compete in a global market. Rapid population growth places increasing pressures on land, water and environmental quality. As a consequence, the agriculture/natural resources sector continues to be challenged for resources including land, water, labor, and other inputs.

The Florida Cooperative Extension service has established public educational programs designed to increase knowledge about agricultural operations, markets, and domestic policies that impact the agricultural industry. These efforts create a more informed voting public so that wise choices can be made to improve the economic viability of the industry, while assuring safe, healthy, and affordable supplies of food, fiber and other commodities for consumers.

## Key Items of Evaluation

Economic loss resulting from disease in Florida's ornamental aquaculture industry has been estimated by producers to be a minimum of \$6-10 million dollars annually. In addition, aquarium hobbyists' poor understanding of environmental disease is considered a major reason that this end-user group leaves the hobby. Consequently, reduction in disease losses and development of practical approaches to fish health management are important for increasing the profitability and satisfaction of the industry at all levels, from producer to consumer.

- A total of 340 clinical cases were submitted by industry for disease and health evaluation. Industry personnel indicated through one-on-teachable moments and follow-ups changes in management to control specific diseases diagnosed on their facility. Numerous clients indicated savings in the thousands of dollars from our fish health programs. For example, three producers, specifically, indicated increased revenues in 2010 for their respective companies-- directly due to action-based/application of information learned from our fish health programs--of \$80,000; \$282,000; and approximately \$1,000,000.