

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

#### Program # 4

##### 1. Name of the Planned Program

Global Food Security and Hunger (Sustainable Agricultural and Forestry Systems)

Reporting on this Program

### V(B). Program Knowledge Area(s)

#### 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	5%	0%		
112	Watershed Protection and Management	5%	0%		
123	Management and Sustainability of Forest Resources	10%	0%		
124	Urban Forestry	5%	0%		
134	Outdoor Recreation	5%	0%		
135	Aquatic and Terrestrial Wildlife	5%	0%		
205	Plant Management Systems	13%	10%		
216	Integrated Pest Management Systems	10%	0%		
301	Reproductive Performance of Animals	5%	10%		
302	Nutrient Utilization in Animals	5%	20%		
303	Genetic Improvement of Animals	5%	10%		
307	Animal Management Systems	10%	20%		
311	Animal Diseases	5%	20%		
315	Animal Welfare/Well-Being and Protection	5%	10%		
601	Economics of Agricultural Production and Farm Management	5%	0%		
806	Youth Development	2%	0%		
	<b>Total</b>	100%	100%		

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

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

Year: 2014	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	43.8	3.3	0.0	0.0
<b>Actual Paid</b>	24.0	1.8	0.0	0.0

<b>Actual Volunteer</b>	0.0	0.0	0.0	0.0
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**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1070139	93635	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
482800	102557	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
3359097	156187	0	0

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

**1. Brief description of the Activity**

Forage Focus Program: A total of 56 forage related activities were developed and conducted. The Fall Armyworm on-farm surveillance program continued to assist farmers in monitoring for this forage destroying pest. Beef Cattle Performance and Marketing Programs: Three breeding bull, 4 replacement heifer sales and 3 feeder calf sales held. In total, 37 activities of educational trainings, planning meetings and marketing events were conducted. Continued emphasis is placed on beef cattle farmers to collect and utilize financial and performance data. Thirty-three herds have submitted weaning weight records for analysis.

Commercial Horticulture Program: The specialty crop industry is on the rise in Alabama with significant number of new and beginning farmers. This training program provided hands-on training to producers, crop consultants, and input retailers about crop production, crop protection/IPM, food storage/food safety, and marketing. The Annual Fruit and Vegetable Conference grew in participation by 35% over the past three years and is now the premier networking event for this industry in Alabama. The statewide vegetable IPM project has received numerous national and regional awards for its high quality and impactful program to the growing industry.

Agronomic Crops Program: Extension specialists, regional agents, and county coordinators participated in over 419 activities. On-farm demonstrations included: corn seeding rate; corn hybrid evaluation; cotton variety evaluation; and wheat cultivar evaluation. Activities also included development of IPM Guides, disease diagnosis, entomology webinar, and stored grain workshops. Alabama Ethnic Food Security Network In 2014, ACES specialists and agents associated with the Alabama Ethnic Food Security Network (AEFSN) conducted and/or participated in twenty-two (22) workshops, three (3) field days and two (2) multistate conferences held in Alabama, Tennessee, Mississippi, and the Republic of the Union of Myanmar. These outreach activities placed emphasis on meat goat and hair sheep production systems and focused on areas such as reproductive and genetic evaluations, feeding and nutrition, forage management, silvopasture systems, fence products and utilization, use of FAMACHA® chart, fecal-egg counts, integrated gastrointestinal parasite management, and biosecurity measures to enhance animal health. Other topics of focus included small-scale meat rabbit production, backyard poultry production and ethnic vegetable production. The programs included presentations and demonstrations by in- and out-of-state experts from academia and government while sponsors included ALFA, Alabama Mountains, Rivers

and Valleys RC&D Council, Alabama Agricultural A+ Marketing Association, Federation of Southern Cooperatives/Land Assistance Fund, Winrock International Farmer to Farmer Program, Tennessee State University and Alcorn University. Additionally, specialist and faculty associated with the AEFSN provided practical and easy to understand publications about goats, sheep, rabbits, backyard poultry and, to some extent, specialty vegetables and their impact on Alabama's economy and natural resources.

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

**Forage Focus Program:** The primary target audience was cattle, equine and hay producers interested in developing improved production of their forages to decrease dependence on stored feed .Beef Cattle Performance and Marketing Programs: The primary target audience was beef cattle producers interested in sustainable and profitable operations.

**Commercial Horticulture Program (AU):** New beginning farmers, experienced established producers, crop advisors, industry representatives, nonprofit agencies, food banks, and gardeners, retailers, and educators

**Alabama Ethnic Food Security Network:** The primary target audience was meat goat and sheep producers developing profitable, sustainable animal production systems. Secondary target audience was small-scale and limited-resource producers of meat rabbits, all natural chickens, and specialty vegetables interested in supplying quality food products. Tertiary target audience was consumers of meat and vegetable products concerned with dietary cholesterol and other health issues.

**3. How was eXtension used?**

The Alabama Vegetable IPM project used eOrganic for delivering a webinar related to crucifer pest management for open field and protected agriculture systems. The abstract and video recording has been promoted to about 6,000 subscribers nationally.

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

**1. Standard output measures**

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	102711	53809378	205	15863858

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

**Patent Applications Submitted**

Year: 2014  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2014	Extension	Research	Total
Actual	15	3	17

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

**Output Target**

**Output #1**

**Output Measure**

- This program area will include numerous output activities and methods as part of the Strategic Program Initiatives (SPIs) and Special Funded Projects (SFPs) which are mentioned/listed in the prior "outcome activities and methods sections." The success of many of these outcomes will be formally evaluated/measured by using individual activity evaluation forms designed specifically for each activity. The success of other activities and methods will be measured by the level of participation in the activity. In the target boxes below for each year, we are indicating the number of individual activities within the SPIs and SFPs for this program area that will be formally evaluated using an evaluation instrument designed specifically for that activity. Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Number of Field Days Conducted

Year	Actual
2014	3

**Output #3**

**Output Measure**

- Total Number of training Participants

Year	Actual
2014	834

**Output #4**

**Output Measure**

- Number of Workshops Conducted

Year	Actual
2014	22

**Output #5**

**Output Measure**

- Number of programs about improving bird health and productivity through improved litter management.

<b>Year</b>	<b>Actual</b>
2014	5

**Output #6**

**Output Measure**

- Number of Regional Field Days and Workshops to Increase Knowledge of Horticulture Production

<b>Year</b>	<b>Actual</b>
2014	19

**Output #7**

**Output Measure**

- Number of Workshops and Field Days to Encourage Adoption of Row Crop Practices that are Sustainable and Profitable

<b>Year</b>	<b>Actual</b>
2014	137

**Output #8**

**Output Measure**

- Number of Publications for Integrated Pest Management Adoption

<b>Year</b>	<b>Actual</b>
2014	7

**Output #9**

**Output Measure**

- Number of Industry Wide Workshops to Increase Knowledge of Catfish Producers

<b>Year</b>	<b>Actual</b>
2014	8

**Output #10**

**Output Measure**

- Number of Workshops to Increase Understanding of Pond Function and Management by

Owners

Year	Actual
2014	10

**Output #11**

**Output Measure**

- Number of 5 Day Teacher Workshops to Increase Appreciation of Aquaculture and Aquatic Natural Resources by Students and Teachers

Year	Actual
2014	1

**Output #12**

**Output Measure**

- Number of new commercial oyster farms established in 2014

Year	Actual
2014	4

**Output #13**

**Output Measure**

- Number of Regional Meetings to Increase Knowledge and Awareness of Methodologies and Practices used in Establishing and Sustaining a Viable Forage Base on Alabama Livestock and Equine Farms

Year	Actual
2014	44

**Output #14**

**Output Measure**

- Number of Value Added Marketing Events to Increase Producer Knowledge Through Comprehensive Programming for Livestock and Equine Owners

Year	Actual
2014	11

**Output #15**

**Output Measure**

- Number of fruit production regional meetings, field days, and workshops

Year	Actual
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2014 68

**Output #16**

**Output Measure**

- Number of participants in fruit production regional meetings, field days, and workshops

<b>Year</b>	<b>Actual</b>
2014	2660

**Output #17**

**Output Measure**

- Number of conventional vegetable production regional meetings, field days, and workshops

<b>Year</b>	<b>Actual</b>
2014	38

**Output #18**

**Output Measure**

- Number of participants in conventional vegetable production regional meetings, field days, and workshops

<b>Year</b>	<b>Actual</b>
2014	1591

**Output #19**

**Output Measure**

- Number of organic vegetable production and high tunnel regional meetings, field days, and workshops

<b>Year</b>	<b>Actual</b>
2014	23

**Output #20**

**Output Measure**

- Number of participants in organic vegetable and high tunnel production regional meetings, field days, and workshops

<b>Year</b>	<b>Actual</b>
2014	664

**Output #21**

**Output Measure**

- Number of turf and landscape regional meetings, field days, and workshops

<b>Year</b>	<b>Actual</b>
2014	9

**Output #22**

**Output Measure**

- Number of participants in turf and landscape regional meetings, field days, and workshops

<b>Year</b>	<b>Actual</b>
2014	217

**Output #23**

**Output Measure**

- Number of reactive phone calls and emails

<b>Year</b>	<b>Actual</b>
2014	27103

**Output #24**

**Output Measure**

- Number of reactive field visits

<b>Year</b>	<b>Actual</b>
2014	385

**Output #25**

**Output Measure**

- Number of handbooks and special publications completed

<b>Year</b>	<b>Actual</b>
2014	5

**Output #26**

**Output Measure**

- Number of extension bulletins and factsheets published

<b>Year</b>	<b>Actual</b>
2014	5

**Output #27**

**Output Measure**

- Number of statewide IPM newsletters published

<b>Year</b>	<b>Actual</b>
2014	19

**Output #28**

**Output Measure**

- Number of newsletters and articles published by Regional Extension Agents

<b>Year</b>	<b>Actual</b>
2014	85

**Output #29**

**Output Measure**

- Number of online training videos completed for producers

<b>Year</b>	<b>Actual</b>
2014	9

**Output #30**

**Output Measure**

- Number of field demonstrations completed (planned activities)

<b>Year</b>	<b>Actual</b>
2014	36

**Output #31**

**Output Measure**

- Number of websites and social media channels developed or maintained for sharing information

<b>Year</b>	<b>Actual</b>
2014	3

**Output #32**

**Output Measure**

- Number of online IPM training modules (self-paced learning system) for producers

<b>Year</b>	<b>Actual</b>
2014	4

**Output #33**

**Output Measure**

- Number of IPM newspaper and magazine publications

<b>Year</b>	<b>Actual</b>
2014	13

**Output #34**

**Output Measure**

- Number of horticultural promotional items for raising awareness about new educational resources

<b>Year</b>	<b>Actual</b>
2014	2

**Output #35**

**Output Measure**

- Number of horticultural podcasts/radio/TV spots

<b>Year</b>	<b>Actual</b>
2014	13

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

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

O. No.	OUTCOME NAME
1	Each ACES employee is required to provide a success story on the program activity which they felt best demonstrates the impacts of their work. These success stories contain the following elements: Why: Explain the reason the program was done, or the situation or problem that the program addressed What: Specifically what was done and how it was done. When: If this was a one-time event, the date it occurred. If it is was a series of events, or an on-going program, when it began. Where: Specific location-- the county or counties involved. Who and how many: The "who" includes both who did the program and who were the clients of the program, as well as how many people were served. So what: This is the part that gives the real meaning to "success". The basic question to be answered in this part is "what difference did this program make". The difference may be measured in terms of dollars, or in changes in habits, lifestyles or attitudes. Whenever possible use numbers to show the effect of the program. If it is not possible to use numbers, provide a qualitative measurement like client comments or another type of testimonial about the program. Since this program area is very broad in scope and contains multiple Strategic Program Initiatives and Special Funded Projects which have different outcomes measures, the impacts for this program area are best measured in the number and quality of the success stories generated by the individuals who work on these projects. Therefore, one very significant outcome measure is the number of success stories generated.
2	Increase farmers' knowledge in efficient and profitable methods of goat, sheep, and specialty vegetable production
3	Increase broiler producer awareness of methods to reduce waste management issues on farms; Increase poultry producer confidence in litter management techniques; and Train poultry industry personnel in poultry house technology and management
4	Increase knowledge of horticultural production methods and marketing
5	Adoption of row crop production practices that are sustainable and profitable
6	Integrated pest management adoption
7	Increase in active, viable forestry and wildlife county committees
8	Increase the knowledge of catfish producers in more efficient practices; Expand the use of hybrid catfish in production; and Incorporate management that optimizes quality and profitability at all stages of production to marketing
9	Increase understanding of pond function and management by owners; Reduce improper management by consultants; and Increase satisfaction and enjoyment of ponds by owners
10	Increase public understanding of water conservation; Improve angler education to increase understanding of fisheries management; and Increase enjoyment of angling
11	Increase appreciation of aquaculture and aquatic natural resources by students and teachers

12	Increase public awareness of costal environmental issues; Increase public awareness of loss of working waterfront; and Increase community resilience to natural and manmade disasters
13	Increase knowledge and awareness of methodologies and practices used in establishing and sustaining a viable forage base on Alabama livestock and equine farms
14	Increase producer knowledge through comprehensive programming for livestock and equine owners on sustainability of production, proper care and appropriate marketing options
15	The number of poultry producers who increase broiler producer of methods to reduce waste management
16	Dollar increase in farm gate income from the adoption of row crop practices that are sustainable and profitable
17	Number of catfish producers establishing advanced raceway production systems.
18	Percent increase understanding of pond function and management by owners
19	The number of youth who learned angling
20	Percent increased appreciation of aquaculture and aquatic natural resources by students and teachers
21	Number of communities developing Working Waterfront Plans.
22	Percentage Increase in knowledge gained of methodologies and practices used in establishing and sustaining a viable forage base on Alabama livestock and equine farms
23	Increased economic impact ( dollar) through comprehensive programming for livestock and equine owners on sustainability of production, proper care and appropriate marketing options
24	Number of fruit and vegetable producer who increase in knowledge of horticultural crop production practices
25	The number of participants who increased knowledge about vegetable Integrated Pest Management (IPM) tactics among conventional producers/large farms
26	Percent change in Knowledge of Integrated Pest Management (IPM) tactics among organic/naturally grown vegetable producers, small and low resource farmers
27	The number of small farms that adopted IPM practices
28	Percent reduction in barriers to the adoption of IPM and production information
29	Percent crop saved and dollar impacts by vegetable IPM project implementation
30	Dollar impact of Extension programs on peach producers in central Alabama

31	The number of two-generation farm families who learned active farm business transitions
32	The number of participants who increased knowledge in forage management, artificial insemination, water quality, and wildlife education
33	Alabama Ethnic Food Security Network-Number of goat and sheep producers that gained knowledge of key production management practices-
34	Alabama Ethnic Food Security Network-Number of goat and sheep producers that observed improved production efficiency
35	Alabama Ethnic Food Security Network-Number of goat and sheep producers that observed improved animal health and well-being
36	Alabama Ethnic Food Security Network-Number of goat and sheep producers that reported increased profitability rates ranging from 5 to 20%

**Outcome #1**

**1. Outcome Measures**

Each ACES employee is required to provide a success story on the program activity which they felt best demonstrates the impacts of their work. These success stories contain the following elements: Why: Explain the reason the program was done, or the situation or problem that the program addressed What: Specifically what was done and how it was done. When: If this was a one-time event, the date it occurred. If it is was a series of events, or an on-going program, when it began. Where: Specific location-- the county or counties involved. Who and how many: The "who" includes both who did the program and who were the clients of the program, as well as how many people were served. So what: This is the part that gives the real meaning to "success". The basic question to be answered in this part is "what difference did this program make". The difference may be measured in terms of dollars, or in changes in habits, lifestyles or attitudes. Whenever possible use numbers to show the effect of the program. If it is not possible to use numbers, provide a qualitative measurement like client comments or another type of testimonial about the program. Since this program area is very broad in scope and contains multiple Strategic Program Initiatives and Special Funded Projects which have different outcomes measures, the impacts for this program area are best measured in the number and quality of the success stories generated by the individuals who work on these projects. Therefore, one very significant outcome measure is the number of success stories generated.

Not Reporting on this Outcome Measure

**Outcome #2**

**1. Outcome Measures**

Increase farmers' knowledge in efficient and profitable methods of goat, sheep, and specialty vegetable production

Not Reporting on this Outcome Measure

### **Outcome #3**

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

Increase broiler producer awareness of methods to reduce waste management issues on farms; Increase poultry producer confidence in litter management techniques; and Train poultry industry personnel in poultry house technology and management

Not Reporting on this Outcome Measure

### **Outcome #4**

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

Increase knowledge of horticultural production methods and marketing

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2014	0

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

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

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
205	Plant Management Systems
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

### **Outcome #5**

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

Adoption of row crop production practices that are sustainable and profitable

Not Reporting on this Outcome Measure

### **Outcome #6**

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

Integrated pest management adoption

Not Reporting on this Outcome Measure

### **Outcome #7**

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

Increase in active, viable forestry and wildlife county committees

Not Reporting on this Outcome Measure

### **Outcome #8**

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

Increase the knowledge of catfish producers in more efficient practices; Expand the use of hybrid catfish in production; and Incorporate management that optimizes quality and profitability at all stages of production to marketing

Not Reporting on this Outcome Measure

### **Outcome #9**

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

Increase understanding of pond function and management by owners; Reduce improper management by consultants; and Increase satisfaction and enjoyment of ponds by owners

Not Reporting on this Outcome Measure

### **Outcome #10**

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

Increase public understanding of water conservation; Improve angler education to increase understanding of fisheries management; and Increase enjoyment of angling

Not Reporting on this Outcome Measure

### **Outcome #11**

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

Increase appreciation of aquaculture and aquatic natural resources by students and teachers

Not Reporting on this Outcome Measure

### **Outcome #12**

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

Increase public awareness of coastal environmental issues; Increase public awareness of loss of working waterfront; and Increase community resilience to natural and manmade disasters

Not Reporting on this Outcome Measure

### **Outcome #13**

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

Increase knowledge and awareness of methodologies and practices used in establishing and sustaining a viable forage base on Alabama livestock and equine farms

Not Reporting on this Outcome Measure

### **Outcome #14**

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

Increase producer knowledge through comprehensive programming for livestock and equine owners on sustainability of production, proper care and appropriate marketing options

Not Reporting on this Outcome Measure

**Outcome #15**

**1. Outcome Measures**

The number of poultry producers who Increase broiler producer of methods to reduce waste management

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2014	5

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

**Issue (Who cares and Why)**

Waste and litter management are important considerations in broiler health and productivity in Alabama. Broiler growers and poultry companies are interested in techniques to better manage litter in and out of poultry houses.

**What has been done**

Broiler litter management was discussed at five poultry industry meetings and two popular press articles discussed improved litter management techniques.

**Results**

Broiler growers gained knowledge of techniques to improve litter conditions and avoid waste issues through misuse of litter as a fertilizer. Efforts have supported increased use of in-house composting of litter and litter acidification products statewide.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

## **Outcome #16**

### **1. Outcome Measures**

Dollar increase in farm gate income from the adoption of row crop practices that are sustainable and profitable

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

- 1862 Extension

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

Change in Condition Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2014	36000000

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

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

Row crop producers are constantly challenged with in-season issues but also managing their profit margins from year-to-year. The agronomic crops team focused on these challenges to help farmers remain profitable but also sustainable.

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

Workshops, field days and training sessions are conducted throughout the year focused on helping farmers obtain timely information related to crop production. Social media, websites, email, phone and farm press are also used to disseminate timely news to farmers and crop consultants

#### **Results**

Weather patterns favored the development of frogeye leaf spot in soybean. Growers were advised to spray a fungicide to 100,000 at-risk acres for a 20% yield gain for a potential increase in farm gate income of \$ 12.1 million. Workshops and advice on stored grain IPM tactics for insect control resulted in an improvement in on-farm stored grain quality through enhanced insect pest control, which increased the value of stored cereal crops by \$1 per bushel. Extension specialists worked directly with farmer possessing a total on-farm storage capacity exceeding 300,000 bushels for an increase in farm income of \$300,000. Electronic media used to alert corn producers across south AL of an outbreak of southern rust and to apply a recommended fungicide for a potential yield gains of 80 bu/ac valued at \$300/ac on 29,000 ac for an increase in farm gate income of \$8.7 million. Enhanced recognition of herbicide resistant weeds in North Alabama has resulted in improved weed control in cotton and corn at savings of \$50 to \$75 over 200,000 ac for a total savings of \$10 to \$15 million to Alabama producers.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
205	Plant Management Systems
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

#### Outcome #17

##### 1. Outcome Measures

Number of catfish producers establishing advanced raceway production systems.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2014	4

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

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

The aquaculture industry and specifically commercial catfish production has experienced significant declines in profitability over the past several years. Competition from seafood produced from outside the United States, other proteins, and increased cost of production have contributed to this downturn in the industry here in the Southeast. Our Pond-to-Plate extension project is leading the industry through a process of evaluating the entire production, processing, and marketing system to determine what aspects can be optimized to increase efficiency and ultimately profitability of the catfish production industry and eventually aquaculture in the southeast as a whole. The project's target audience is primarily catfish producers, processors, and marketers centered mostly in west central Alabama.

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

The project conducted a review of the US catfish industry. Two industry wide workshops with over 250 participants were held to address industry needs and issues. ACES Specialists and researchers introduced new technology and research in a series of informational meetings. Conducted Yield verification and product quality studies were conducted with catfish producers in

West Alabama. The project produced the booklet "Best Management Practices for the Commercial Production of Catfish in Alabama" prepared from results of several studies completed during 2013. A DVD entitled "Advances in Aquaculture" including catfish fillet color standards, harvesting fish with a fish pump, hybrid catfish grading seine, and advanced aquaculture systems was completed and distributed.

### **Results**

Pond to Plate program increased catfish industry participants understanding of the industry and established four potential solutions that would help increase production and profitability of producers and processors. Findings included: 1) industry improvement will require increased production efficiency, raising quality standards (workmanship, flavor, consistency) and improved product marketing; 2) despite declines in the industry, workshop attendees expressed strong belief that they would still be involved in catfish production five years from now, and that the market for U.S. farm-raised catfish could be increased by 65% in the next 20 years; 3) renewed farmer/processor dialogue showed that value-chain linkages need to be improved. 4) Participants agreed that U.S. farm-raised catfish should be marketed as an environmentally-friendly, locally grown, nutritious and sustainable protein. Workshop attendees gained specific knowledge on current practices technologies they can adopt to improve industry sales and competitiveness. The Pond-to-Plate project helped develop new catfish products to be used by west Alabama school lunch programs.

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

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
135	Aquatic and Terrestrial Wildlife
302	Nutrient Utilization in Animals
307	Animal Management Systems
311	Animal Diseases
601	Economics of Agricultural Production and Farm Management

### **Outcome #18**

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

Percent increase understanding of pond function and management by owners

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

### 3b. Quantitative Outcome

Year	Actual
2014	83

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

With approximately 250,000 ponds in Alabama, management of these aquatic systems is an important activity that impacts quality of life through recreation and aesthetics. Fishing is the most common use of ponds in Alabama but they are also used for stock watering, irrigation, drinking water supplies, aquatic gardening, aquaculture and other uses. While the basic principles of pond management are well established, it is valuable to educate pond owners and managers in proper strategies to meet their management goals and to provide reactive services to help them address problems as they arise.

#### What has been done

Our efforts included workshops, digital information and tools, routine services, and mass media delivery. We conducted 10 workshops ranging from a simple presentation to demonstrations and services provided. Maintained the recreational fishing portion of our website, where all our Extension literature, video, supplier lists, and slide presentations for pond management and fisheries is available to the public. A new publication "Freshwater Clams and Mussels: filter feeders that can cause problems in your pond" was produced. We maintained the Alabama Extension Fisheries and Pond Management Facebook Page by creating more than 220 posts of original and shared material. Extension personnel provided routine services and consultation to solve pond problems.

#### Results

Evaluation of the program was limited to change in knowledge associated with individual workshops and satisfaction with the information presented. In the workshops where pre-post testing occurred participants on average more than doubled the percentage of correct answers after attending the workshop.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
134	Outdoor Recreation
135	Aquatic and Terrestrial Wildlife
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems

## **Outcome #19**

### **1. Outcome Measures**

The number of youth who learned angling

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

- 1890 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2014	145

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

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

Angling is an activity with millions of participants across the United States. In Alabama direct expenditures on angling exceed \$600,000,000 annually. Interest in aquatic environments stimulated from an interest in fishing can be used to educate and inculcate an appreciation in aquatic stewardship

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

Eleven youth angler education events were held in 2013 including a 4H Family Fun Fishing Day, participation in the Ag Discovery Day at EV Smith Experiment Station and Ag Roundup providing a casting activity and fish prints, and other fishing events.

#### **Results**

More than 850 youths participated in angler education events. Approximately 30% had no previous experience fishing. All of the participants were able to cast after the workshops. Basic angling skills, ethics, and water conservation were covered in the workshop.

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

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
134	Outdoor Recreation

## **Outcome #20**

### **1. Outcome Measures**

Percent increased appreciation of aquaculture and aquatic natural resources by students and teachers

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2014	26

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

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

Aquaculture programs have been established in several high schools and middle schools in Alabama. Aquaculture provides applications of science, mathematics, and even social science such as economics and marketing that support the middle school and high school teaching objectives. Training and curricula developed by Specialists in this project are used by teachers, extension personnel, and students in several states.

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

This project included a 5 day teacher workshop in with another state specialist and outside cooperators for 23 participants from multiple states and a multicounty aquaponics workshop for 24 people. Three state specialists conducted 30 school visits to provide technical support and instruction. Four thousand tilapia fingerlings were supplied to schools for aquaculture projects. Ten aquaculture videos were produced and placed on YouTube where they received 31,000 views.. Specialists provided input and updates for the education section of our web site which received 635,669 page views

#### **Results**

Teacher workshop pre/post testing indicated that teachers increased their aquaculture knowledge by 26%. Participants learned the basics of effective pond management including proper pond construction, fertility management, weed control, stocking and harvest rates of fishes. More advanced techniques including the fish enhancement approaches and involving ponds in total land management were also included in the workshops and in individual consultations with pond owners. Teacher remarks in the workshop evaluation indicated universal satisfaction with the training and excitement in implementing the programs in their classrooms. Providing aquaculture education information online provides access to teacher, students, and the public worldwide. This

enhances their understanding and appreciation for aquaculture. Teachers report that aquaculture material increase student engagement in learning math and science. The Introduction to aquaculture video on you tube was viewed 3299 by people in 136 countries providing broad reach of our expertise

#### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
134	Outdoor Recreation
135	Aquatic and Terrestrial Wildlife
205	Plant Management Systems
216	Integrated Pest Management Systems
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
806	Youth Development

#### Outcome #21

##### 1. Outcome Measures

Number of communities developing Working Waterfront Plans.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Condition Outcome Measure

##### 3b. Quantitative Outcome

<b>Year</b>	<b>Actual</b>
2014	1

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

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

Working waterfronts are critical to the economic vitality of coastal communities. Working waterfronts provide the infrastructure needed by fishing (both commercial and recreational) and other water-based industries. The gentrification of docks has led to less and greatly more expensive service areas pushing the working boats further away from traditional areas or placing

businesses in peril.

**What has been done**

Participated in the founding steering committee of the National Working Waterfront Network  
Presented the Alabama Working Waterfront project at the National Working Waterfront conference.

Assisted in Fourth National Working Waterfront Conference planning  
Specialists facilitated the efforts of the Alabama Working Waterfront Coalition.  
Ensured the Gulf Shores Working Waterway District is a case study on the National Working Waterfront Network Toolkit. The project produced the Working Waterfront display at the Bayou La Batre Blessing of the Fleet.

**Results**

The Alabama Working Waterfront Coalition has formed a board and elected a chairmen, and is becoming an independent organization apart from Extension. This will allow greater ability for the group to lobby for the working waterfront issues. This group incorporated this year as an official stakeholder group. By hosting the National Working Waterfront conference, the northern Gulf will showcase its working waterfront, calling state and national attention to the assets and needs there. Inclusion of the Gulf Shores project case study enhances the knowledge of communities who use the case studies, and can serve as a model.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
112	Watershed Protection and Management
134	Outdoor Recreation
601	Economics of Agricultural Production and Farm Management

**Outcome #22**

**1. Outcome Measures**

Percentage Increase in knowledge gained of methodologies and practices used in establishing and sustaining a viable forage base on Alabama livestock and equine farms

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
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2014

25

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

For livestock enterprises in Alabama, quality forage production is key to profitability and sustainability. Research shows over 70% of any livestock budget is spent on feedstuffs to maintain the individual animal throughout the year. Minimizing grain use for ruminant livestock species and equine and maximizing the use of high quality forages not only meets nutritional requirements, but also decreases feedstuff costs. The goal for Alabama livestock farmers is to have 300 days of quality forage available each year.

#### What has been done

A comprehensive set of programs for livestock, equine and forage producers have been developed and implemented. These programs were all designed to increase farmers abilities in establishing and sustaining a viable forage base for their operation. Programs are varied in terms of delivery, length and depth of subject matter. Six demonstration/research forage plots were utilized as well as 56 regional/county meeting conducted. Additionally, a webinar series (n=7) was conducted concentrating on current forage topics and forage pests as well as publications (n=5), you-tube videos (n=1), magazine articles (n=17) and timely information sheets (n=26).

#### Results

Twenty meetings were held with area cattle producers on forage management, 10 meetings focused on weeds/pest management and 10 meetings focused on haylage/balage/silage. Participants (n=67) in a regional Weeds and Pest Workshop indicated a 25% increase in knowledge gained in the areas of forage management, beef cattle production and pest management in forages. Participating producers from 7 counties suggested they would utilize knowledge gain to better manage 6,310 acres resulting in a \$46,720 impact. Additionally, a fencing school protocol was developed and implemented by extension professionals. One fencing school was conducted for 20 equine producers with emphasis on building fences for proper forage management, In 2014, 7 forage focus webinars were conducted. Utilizing webtrend data, the 2014Webinars page on [www.alabamaforges.com](http://www.alabamaforges.com) is the second ranked page with 565 total visits and 631 views.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems
302	Nutrient Utilization in Animals
307	Animal Management Systems
315	Animal Welfare/Well-Being and Protection

## **Outcome #23**

### **1. Outcome Measures**

Increased economic impact ( dollar) through comprehensive programming for livestock and equine owners on sustainability of production, proper care and appropriate marketing options

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

- 1862 Extension

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

Change in Condition Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2014	10121050

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

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

Cattle farmers who have implemented science-based management techniques generally are not economically rewarded through weekly livestock sales. This program allows producers to learn about, participate in and take leadership in alternative marketing opportunities. These marketing opportunities allow producers the opportunity to see increased market prices over weekly livestock auction prices. These marketing opportunities also allow producers to pool cattle together which, because of volume and quality, attract a large number of potential buyers from across the United States. Additional dollars to cattle farmers benefit local communities since research indicates 75 to 85% of income is spent locally.

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

Education and guidance were provided to beef cattle farmers to assist in adding value and options to market feeder calves in economic units and breeding animals, such as bulls and replacement heifers, by Regional Extension Agents and Specialists in 2014. Three value-added feeder calf marketing events were held with educational assistance by ACES personnel. Five marketing events within Beef Cattle Improvement Association (BCIA) were also held to market bulls, bred and open heifers. For each marketing event, producers provided verifiable production and health information that was transformed into catalog form to help guide buyers in purchase selection

#### **Results**

Value-added feeder calf marketing opportunities (n=3) represented 5,516 head of Alabama bred and raised feeder calves weighing over 4.4 million pounds worth over \$8.4 million. Producers

utilizing proper management and health protocols realized on average \$162.12/head more in marketing in these sales over weekly auction sales. This amounts to \$860,000 additional revenue in producers pockets. Bulls marketed via BCIA marketing events had an overall gross of \$840,350 with an average price per bull of \$4,932. Bred heifers (n=338) were marketed for an overall gross of \$816,950 with an average price per bred heifer of \$2,417. Open heifers (n=40) were marketed for an overall gross of \$60,750 with an average price per open heifer of \$1,519..Overall economic impact of \$1,721,050 from 549 head of breeding animals marketed. Producers marketing bred replacement females through these marketing opportunities have indicated an estimated \$475 per head net gain over expenses and opportunity costs. Buyers of breeding animals are likely purchasing genetically superior individuals to those already on the farm. This should translate into increased potential farm income as long as proper management practices are followed.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
307	Animal Management Systems
315	Animal Welfare/Well-Being and Protection
601	Economics of Agricultural Production and Farm Management

#### Outcome #24

##### 1. Outcome Measures

Number of fruit and vegetable producer who increase in knowledge of horticultural crop production practices

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2014	4251

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

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

Fruit and vegetable producers (n=4,251) need continuous training on crop production (variety selection, irrigation, and nutrition emphasis) and pest management tactics (organic and conventional systems) to avoid 50 to 80% crop loss due to high heat and humidity conditions in

the south.

**What has been done**

Fruit production meetings = 68; Vegetable production meetings = 61 (conventional + small farms programs); Nursery and landscape = 9; Pesticide safety = 18; GAP/Food safety = 8; Gardening = 27; field visits by REAs = 385 (reactive consultations); planned demonstrations = 36  
Special emphasis on peach production and pest management training via regional meetings, hands-on workshops, and reactive consultation throughout the year (critical to the industry).

**Results**

REAs and Specialists provided comprehensive training to fruit producers across Alabama via 68 regional meetings and ~385 reactive consultation visits resulting in a highly sustainable and growing fruit industry. REAs also conducted 61 vegetable production meetings statewide for large and small farms. Surveys indicate that 4,251 producers increased knowledge by over 50% and also changed production practices on their farms.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
205	Plant Management Systems
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

**Outcome #25**

**1. Outcome Measures**

The number of participants who increased knowledge about vegetable Integrated Pest Management (IPM) tactics among conventional producers/large farms

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2014	145

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

**Issue (Who cares and Why)**

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Alabama has a hot and humid environment that is very conducive for insect pests and diseases. The Commercial Horticulture REAs and Specialists provide planned and reactive programs throughout the year to sustain the growing industry.

**What has been done**

Number of meetings = 5; number of producers = 145; number of hours of IPM training = 108  
The Extension Commercial Horticulture Team is the backbone of the specialty crop industry with REAs and Specialists functioning together to deliver complex programming via needed publications (traditional and electronic), newsletters (, magazine/newspaper articles, iBook etc. The Vegetable IPM project provides critical support to producers who can potentially lose 50% or more of their crop without IPM information (based on feedback from participants).

**Results**

Producers are demanding the educational publication and activities, instead of educators pushing the information. This indicates the high relevance of IPM program statewide. IPM adoption rate for experienced producers is about 70 to 80% and producers and some publications are KEY RESOURCES for producers.. The Vegetable IPM program has received two national awards from the National Association of County Agricultural Agents (NACAA), two regional programming awards from the Southern Region IPM Center, one Communications Blue Ribbon Award from the American Society of Horticultural Science, and six other communication awards

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

**Outcome #26**

**1. Outcome Measures**

Percent change in Knowledge of Integrated Pest Management (IPM) tactics among organic/naturally grown vegetable producers, small and low resource farmers

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2014	40

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Small farms are the backbone of the local food systems in Alabama and this organic/small farms IPM program supports nearly 1000 producers with critical information. This project also directly assists NRCS and FSA who needed broader support for their farm loan programs.

#### What has been done

Number of meetings = 30; number of participants = 904; number of IPM training hours = 1379  
Over 900 open field crops and high tunnel crop producers have been trained via regional meetings, workshops, and field demonstrations. We have also published a High Tunnel Crop Production Handbook in print and as an iBook, several bookmarks, and an Alternative Vegetable IPM Slide Chart that have an overall circulation of 6000+.

#### Results

The organic and small farm vegetable IPM program was launched as a separate program based on high demand statewide. Due to an unprecedented demand from producers and focused effort from Regional Extension Agents on the Commercial Horticulture Team, the small farm IPM program has reached every corner of the state and continues to grow. A combination of planned and reactive activities has resulted in a high quality program. Average change in knowledge is over 40% for new producers with very high IPM adoption rates.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems

### Outcome #27

#### 1. Outcome Measures

The number of small farms that adopted IPM practices

#### 2. Associated Institution Types

- 1862 Extension

#### 3a. Outcome Type:

Change in Action Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2014	904

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Insect pests in vegetables can cause direct crop loss and contamination of nearly 100% of produce if not managed in a timely manner. Established small farms (5-10 acres) and beginning farms (2 acres ave.) usually do not use expensive insecticides due to diversified operation and for worker protection near peri-urban areas. For them, alternative pest management strategies are extremely useful for increasing crop production and quality of produce.

#### What has been done

Number of meetings = 30; number of participants = 904; number of IPM training hours = 1379  
The Alabama Vegetable IPM program reaches to conventional large operations and small farmers across the state through complex programming involving regional Extension Agents, county Extension coordinators, and a number of producer organizations and nonprofit agencies

#### Results

The Alabama small farm IPM program is one of the fastest growing educational initiatives in the state since many small farmers and state/federal agencies are supporting this initiative. . Due to this relatively new initiative, 904 farms have adopted alternative IPM strategies. The adoption rate at present varies from 26 to 46% among small farms and new producers. Direct impact of the small farm program may amount to nearly \$2 to 3 million dollars based on current IPM adoption rates. The conventional IPM program adds more impact to those numbers.  
rates

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

### Outcome #28

#### 1. Outcome Measures

Percent reduction in barriers to the adoption of IPM and production information

#### 2. Associated Institution Types

- 1862 Extension

#### 3a. Outcome Type:

Change in Knowledge Outcome Measure

### 3b. Quantitative Outcome

Year	Actual
2014	1049

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

One of the major issues with vegetable producers was the lack of rapid information transfer system for pest alerts and access to publications in variety of formats that was affecting the adoption of IPM among producers. The situation was worse for new beginning farmers, urban farms, and low resource farmers. Hence corrective actions were initiated in 2010 to great impact over the past four years.

#### What has been done

Number of regional vegetable IPM meetings, workshops, and field days = 35; Number of participants = 1049; Number of IPM training hours provided = 1487 hours or 185 days of intense training; Number of IPM newsletters = 19; Number of email alerts to all newsletter subscribers = 26,600; Number of emails and phone calls by regional Extension agents (30-40% vegetable calls) = 27,103; number of magazine/newspaper articles = 43; number of reactive farm visits by regional Extension agents (30% vegetable related) = 385. From these number it is clear that the commercial horticulture Extension team has reached out to producers throughout the state increasing the overall "Pull" on educational programs

#### Results

Alabama Extension Commercial Horticulture Team is recognized for its high outputs, relevant outcomes and evaluation system, high quality of training, and impactful resources. For example, in the past five years, IPM program awareness has risen from 35% to 63% after intensive educational campaigns. This continues to increase as new producers and experienced farmers continue to utilize educational resources and receive timely recommendations from team members. The Alabama Fruit and Vegetable Annual Conference, another major communication initiative, has grown by over 30% and is attended by nearly 250 producers and industry personnel (details at [www.afvga.aces.edu](http://www.afvga.aces.edu)). We are constantly monitoring and evaluating program outcomes for detecting any problems with clientele and take timely action.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

## **Outcome #29**

### **1. Outcome Measures**

Percent crop saved and dollar impacts by vegetable IPM project implementation

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2014	1049

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

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

Based on evaluation surveys (electronic and print formats), the average crop loss prevented by the vegetable IPM project is 50%. However, there are certain areas of Alabama (such as the Gulf Coast Region) where insect pest pressure can cause over 90% crop losses. Overall impact of the vegetable IPM project is over \$5 million based on reactive activities alone. Alabama produces nearly \$70 million worth of specialty crops/local foods- half of it is from a rapidly growing vegetable crops. Tomato production jumped 26% in one year due to crop failure in California which increase demand for IPM recommendations in a variety of growing conditions. So producers need continuous access to information and consultation services provided by regional Extension agents, County Extension coordinators, and Extension Specialists.

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

Number of regional vegetable IPM meetings, workshops, and field days = 35; Number of participants = 1049; Number of IPM training hours provided = 1487 hours or 185 days of intense training; Number of IPM newsletters = 19; Number of email alerts to all newsletter subscribers = 26,600; Number of emails and phone calls by regional Extension agents (30-40% vegetable calls) = 27,103; number of magazine/newspaper articles = 43; number of reactive farm visits by regional Extension agents (30% vegetable related) = 385.

#### **Results**

The vegetable IPM project is in very high demand from small and large, organic and conventional producers statewide; website gets about 120 hits per day during production season and we have over 423 subscribers on IPM Facebook page (besides 1600 on our email list). Extension Specialists and REAs regularly participate in events organized by Alabama A&M and Tuskegee University with hands-on teaching materials. Currently we are developing interactive e-curriculum and phone apps to reach audience in remote areas and nontraditional audience. The IPM training

modules on vegetable IPM website are extremely popular and are being used by collaborators in Florida, Georgia, Mississippi, Tennessee, Oklahoma and Arkansas. We also continue to focus on IPM in-service training events for Extension personnel across all three land-grant institutions in order to strengthen the industry statewide

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

#### Outcome #30

##### 1. Outcome Measures

Dollar impact of Extension programs on peach producers in central Alabama

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2014	5400000

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

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

Peach crop is valued over \$10 million in north Alabama and producers need constant information for increasing production and pest management in orchards. In recent years, due to the old age of many orchards, producers have received a lot of information about new varieties along with updates about pest management. So we see a rising demand for information from stakeholders

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

A total of 68 fruit production meetings were conducted statewide by Extension agents and peach production was the focus of about 16 meetings. Other meetings included peaches as updates but not exclusively. Regional Extension agent in Chilton County has many large peach producers in his area and he has been leading the peach production sessions in the region with great impact. The peach meeting done in January of every year is a popular event that is evaluated for quality and impacts. The peach meeting is followed up by many on-farm visits by the Extension agents to commercial orchards that amplifies the impact of this project.

### Results

Feedback from peach producers collectively indicated crop yield improvement of 117% by implementing improved peach production practices focused on new varieties, nutrition, and pest management. This suggests a crop value exceeding \$5.4 million.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

### Outcome #31

#### 1. Outcome Measures

The number of two-generation farm families who learned active farm business transitions

#### 2. Associated Institution Types

- 1862 Extension

#### 3a. Outcome Type:

Change in Knowledge Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2014	70

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

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

For many families working to transfer a farming operation from one generation to the next, it's not the legal, financial and technical issues that prove most challenging. As many families have learned from experience, "often bitter experience" the biggest challenge often involves ensuring that this transition occurs on the basis of open communication and trusting relationships among families members. Effective relationship building and overcoming barriers to effective communication often prove to be the critical measure of success in the course of transferring a farming operation from one generation to the next.

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

Three workshops were conducted for farm families interested in the early stages of two-generation farm business transition. The workshop focused on helping two-generation parties begin to develop the skills outlined in the following objectives: 1) to assess the feasibility of two-generation farming 2) to develop communication and human relationship skills essential for

success 3) to transfer ownership and management and the division of business income 4) to evaluate factors in selecting and developing a business arrangement. Participants were expected to bridge awareness and behavior change after the workshop session by applying new skills learned.

**Results**

Surveys were collected from 70 two-generation farm families, representing 126 participants, to determine knowledge or commitment before and after the workshop. Data were analyzed using a paired sample T-test for mean change over time. Cohen's d (Abs. Value), the effect size of the mean level changes, is reported as follows for each skill or function item. Standard guideline for interpretation, .20 is a small effect size; .50 is a moderate effect size; .80 is a large effect size. For this workshop, the effect size range on the items was .91-1.92, so these would be considered very large shifts in knowledge or commitment. Farm Business Transition Skills: Knowledge of Successful Two Generation Farming Strategies = 1.97, Commitment to Use Successful Two Generation Farming Strategies = 1.02, Knowledge of Successful Transferring Ownership, Management, and Income Strategies = 1.87, Commitment to Use Successful Transferring Ownership, Management, and Income Strategies = 1.34, Knowledge of Structures for Succession Planning = 1.33, Ability to Identify the Best Structure for Succession Planning = 1.40, Commitment to Use the Best Structure for Succession Planning = 0.92. Family Functioning: Knowledge of Healthy Family Relationship Skills = 1.10 , Commitment to Use Positive Communication Skills = 1.02, Knowledge of Healthy Conflict Management Skills = 1.04, Commitment to Use Healthy Conflict Management Skills = 0.91.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
601	Economics of Agricultural Production and Farm Management

**Outcome #32**

**1. Outcome Measures**

The number of participants who increased knowledge in forage management, artificial insemination, water quality, and wildlife education

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
------	--------

2014

143

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Environmental and natural resource outreach education for youth provides a framework for citizens to avoid the long-term consequences associated with poor environmental stewardship and management of natural resources.

#### What has been done

150 youth and adults attended the Farm Day held at the new ACES Graham Farm & Nature Center in Jackson County, Alabama. This event consisted of eight (8) educational programs which included forage management, artificial insemination, water quality, and wildlife education.

#### Results

According to follow-up evaluations, over 95% of the attendees stated the programs made significant financial impact related to their farm/ranch practices and youth career choices. This opportunity served as a benchmark for future programming at the GFNC.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
123	Management and Sustainability of Forest Resources
124	Urban Forestry
134	Outdoor Recreation
806	Youth Development

### Outcome #33

#### 1. Outcome Measures

Alabama Ethnic Food Security Network-Number of goat and sheep producers that gained knowledge of key production management practices-

#### 2. Associated Institution Types

- 1890 Extension

#### 3a. Outcome Type:

Change in Knowledge Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
------	--------

2014

309

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

The dynamic population change that has taken place in Alabama represents new opportunities for food producers and marketers. Because consumer demand for ethnic foods is rising, farmers in Alabama, particularly small-scale and limited-resource farmers have tremendous opportunities to diversify, expand, and supply the growing demand for a number of multicultural foods such as goat and lamb. Therefore, to ensure that farmers improve goat and sheep production in Alabama, comprehensive educational products regarding small ruminant management and technological advances were needed.

#### What has been done

In an effort to help Alabama farmers increase production of goat and lamb meat, Animal Science specialists and agents from the Urban Affairs and New Nontraditional Program (UANNP) Unit of ACES carried out an array of outreach activities (See Planned Program (Activity)) and provided broadly-based and objective information in areas such as feeds and feeding, animal genetics, reproductive management, and health of small ruminants.

#### Results

Goat and sheep producers from Alabama and neighboring states became more knowledgeable and stayed open to new and different management practices. Three-hundred and twenty-nine (329) post surveys indicated that 94% (309) of the respondents gained knowledge about goat and sheep nutrition, genetics, reproduction, and health management practices as a result of the educational activities and the information provided.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection

### Outcome #34

#### 1. Outcome Measures

Alabama Ethnic Food Security Network-Number of goat and sheep producers that observed improved production efficiency

#### 2. Associated Institution Types

- 1890 Extension

### 3a. Outcome Type:

Change in Condition Outcome Measure

### 3b. Quantitative Outcome

Year	Actual
2014	217

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

The dynamic population change that has taken place in Alabama represents new opportunities for food producers and marketers. Because consumer demand for ethnic foods is rising, farmers in Alabama, particularly small-scale and limited-resource farmers have tremendous opportunities to diversify, expand, and supply the growing demand for a number of multicultural foods such as goat and lamb. Therefore, to ensure that farmers own and operate efficient goat and sheep production enterprises, comprehensive educational products regarding forage resource management, identification of appropriate breeds, parasite control, record keeping, and performance evaluation and genetic improvement were needed.

#### What has been done

In an effort to help Alabama farmers to successfully own, operate and support goat and sheep farms and associated businesses, Animal Science specialists and agents from the UANNP Unit of ACES carried out an array of outreach activities (See Planned Program (Activity)) and provided broadly-based and objective information that emphasized basic goat and sheep management, forage-based feeding system for year-round grazing, breed types best suited for the environmental and management conditions in Alabama, keeping records of individual performance of animals to rank animals with superior genetics, and parasite control strategies.

#### Results

Goat and sheep producers from Alabama and neighboring states owned and operated successful farms by improving their efficiency of goat and lamb production. Three-hundred and twenty-nine (329) post surveys indicated that 66% (217) of the respondents reported increases in production efficiency as a result of the educational activities and the information provided.

## 4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals

307	Animal Management Systems
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection

### **Outcome #35**

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

Alabama Ethnic Food Security Network-Number of goat and sheep producers that observed improved animal health and well-being

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

- 1890 Extension

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

Change in Condition Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2014	72

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

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

Because consumer demand for ethnic foods is rising, farmers in Alabama, particularly small-scale and limited-resource farmers have tremendous opportunities to diversify, expand, and supply the growing demand for a number of multicultural foods such as goat and lamb. However, since goat and sheep are more susceptible to internal parasites than other livestock, and are the #1 health problem affecting small ruminants, integrated parasite control methods that decrease reliance on chemical dewormers have to be an important educational focus in Alabama. Therefore, to ensure that farmers use selective deworming to decrease reliance on chemical dewormers, comprehensive educational products that focus on the use of FAMACHA, fecal egg counts, and other integrated parasite control strategies were needed.

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

In an effort to help Alabama farmers to combat the prevalence of gastrointestinal nematodes while decreasing reliance on chemical dewormers, Animal Science specialists and agents from the UANNP Unit of ACES carried out an array of outreach activities (See Planned Program (Activity)) and provided broadly-based and objective information that emphasized the use of FAMACHA charts, fecal egg counts, other integrated parasite control strategies, and goat and sheep breed types and crosses that are resistant or resilient to gastrointestinal nematodes.

##### **Results**

Goat and sheep producers from Alabama and neighboring states fought internal parasites in their animals by using several tools that mitigated the effects of these parasites and enabled farmers to maintain the productivity and health of their livestock. Three-hundred and twenty-nine (329) post surveys indicated that 22% (72) of the respondents reported improvements in herd health and well-being as a result of the educational activities and the information provided

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection

#### Outcome #36

##### 1. Outcome Measures

Alabama Ethnic Food Security Network-Number of goat and sheep producers that reported increased profitability rates ranging from 5 to 20%

##### 2. Associated Institution Types

- 1890 Extension

##### 3a. Outcome Type:

Change in Condition Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2014	60

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

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

The dynamic population change that has taken place in Alabama represents new opportunities for food producers and marketers. Because consumer demand for ethnic foods is rising, farmers in Alabama, particularly small-scale and limited-resource farmers have tremendous opportunities to diversify, expand, and supply the growing demand for a number of multicultural foods such as goat and lamb. Therefore, to ensure that farmers own and operate profitable goat and sheep production enterprises, comprehensive educational products regarding forage resource management, identification of appropriate breeds, parasite control, record keeping, and

performance evaluation and genetic improvement were needed.

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

The dynamic population change that has taken place in Alabama represents new opportunities for food producers and marketers. Because consumer demand for ethnic foods is rising, farmers in Alabama, particularly small-scale and limited-resource farmers have tremendous opportunities to diversify, expand, and supply the growing demand for a number of multicultural foods such as goat and lamb. Therefore, to ensure that farmers own and operate profitable goat and sheep production enterprises, comprehensive educational products regarding forage resource management, identification of appropriate breeds, parasite control, record keeping, and performance evaluation and genetic improvement were needed.

#### **Results**

Goat and sheep producers from Alabama and neighboring states owned and operated profitable farms by improving efficiency of production and herd health management. Three-hundred and twenty-nine (329) post surveys indicated that 18.2% (60) of the respondents reported increases in profitability ranging from 5 to 20% as a result of the educational activities and the information provided.

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

<b>KA Code</b>	<b>Knowledge Area</b>
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
311	Animal Diseases
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#### **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
- Populations changes (immigration, new cultural groupings, etc.)

##### **Brief Explanation**

The Extension Commercial Horticulture Team have achieved a high degree of success in planned programs and developed statewide resources. However, rapid onset of invasive insect pests (such as the brown marmorated stink bugs and spotted wing drosophila) bring

unique challenges to program development and delivery to needy producers. Growing vegetable industry in Alabama is also resulting in stretching of statewide resources and horticultural programs are increasingly becoming collaborative in nature.

## **V(I). Planned Program (Evaluation Studies)**

### **Evaluation Results**

Extension Commercial Horticulture Projects are evaluated routinely through online and printed evaluations (reactive type), case studies (outcomes), testimonials (qualitative input), comparison groups, and on-farm interviews (please refer to video posted on [www.aces.edu/vegetableipm](http://www.aces.edu/vegetableipm) for some aggregated information). Alabama Vegetable IPM and Commercial Horticulture Team has also developed an evaluation toolkit that is used as a resource by educators within or outside the organization for developing surveys. Horticulture Team leader provides evaluation templates to Extension Team members as requested and assists in data entry and analysis. Evaluations are also used as monitoring tools to document new needs; this complements feedback from county advisory panels and producer organizations. Alabama Ethnic Food Security Network\* Increased knowledge of key production management practices.\* Improved efficiency of production.\* Improved animal health and well-being.\* Increased marketing and profitability.

### **Key Items of Evaluation**

Commercial Horticulture evaluation results are as follows (two major programs evaluated in 2014): 1. Alabama Vegetable IPM program with its two major sub-projects (conventional and organic/small farm) and multi-level training system, reaches to over 1,000 producers statewide with direct program impacts exceeding \$5 million per year (conservative estimate). Nearly 1500 hours of IPM training was provided to producers in 2014 with estimated 50% reduction in crop losses; 2. The Alabama Peach Program with focus in Central Alabama reaches to over 150 producers statewide (producers attend meeting from many parts of the state) with crop improvement of 117% from use of new production practices equivalent to over \$5.4 million in impact (conservative estimate). B. Regional Extension Agents completed nearly 68 fruit production, 61 vegetable production, 9 nursery and landscape, 18 pesticide safety, 8 food safety/GAP, and 36 on-farm training events which indicates rapid growth in demand for such programs. 3. Regional Extension Agents and Specialists also completed over 385 reactive field visits, answered 7257 phone calls and 19,846 emails. C. The urban farms project is also assisting producers in city limits and special collaborative projects at Alabama A&M University. Extension agents also provided support to community gardens, including one new project in Florence (AL) that produced nearly 2000 pounds of produce. That site was also used for the organic/small farm training events reaching over 120 educators, city leaders, and gardeners. D. Commercial Horticulture Team has also completed several collaborative projects with Extension Teams in adjoining states, especially Florida, Tennessee, and Georgia. The efforts resulted in cross-programming, sharing of experiences, and several new publications that are extremely popular. Overall, there is plenty of evidence for the need of the commercial horticulture educational programs and rapidly increasing activity of the Extension Team to support experienced and new producers statewide. Value-added feeder calf marketing opportunities (n=3) represented 5,516 head of Alabama bred and raised feeder calves weighing over 4.4 million pounds with over \$8.4 million. Producers utilizing proper management and health protocols realized on average \$162. 12/head more in marketing

in these sales over weekly auction sales. This amounts to \$860,000 additional revenue in producers pockets. Bulls marketed via BCIA marketing events had an overall gross of \$840,350 with an average price per bull of \$4,932. Bred heifers (n=338) were marketed for an overall gross of \$816,950 with an average price per bred heifer of \$2,417. Open heifers (n=40) were marketed for an overall gross of \$60,750 with an average price per open heifer of \$1,519. Overall economic impact of \$1,721,050 from 549 head of breeding animals marketed. Electronic media used to alert corn producers across south AL of an outbreak of southern rust and to apply a recommended fungicide for a potential yield gains of 80 bu/ac valued at \$300/ac on 29,000 ac for an increase in farm gate income of \$8.7 million. Enhanced recognition of herbicide resistant weeds in north Alabama has resulted in improved weed control in cotton and corn at savings of \$50 to \$75 over 200,000 ac for a total savings of \$10 to \$15 million to Alabama producers. Alabama Ethnic Food Security NetworkAs a result of the educational activities, the following quantitative outcomes (based on 329 post surveys) were achieved: •309 goat and sheep producers gained knowledge of key production management practices. • 217 goat and sheep producers observed improved production efficiency. • 72 goat and sheep producers observed improved animal health and well-being. • 60 goat and sheep producers reported increased profitability rates ranging from 5 to 20 percent. Alabama Ethnic Food Security NetworkAs a result of other educational activities, the following quantitative outcomes (based on 225 post surveys) were achieved: • 80 small-scale farmers gained knowledge about silvopasture systems for meat goat and timber production. • 7 small-scale farmers gained knowledge about proper use, storage, and disposal of livestock medicines. • 111 farmers from the Republic of the Union of Myanmar gained knowledge of key production management practices for meat goat and sheep. • 20 animal industry professionals from the Republic of the Union of Myanmar gained knowledge of key production management practices for meat goat and sheep.