

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%		
	Total	100%	100%		

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	2.4	0.0	0.0
Actual Paid Professional	26.1	1.8	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1304335	109454	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
453091	109454	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
3143088	116666	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Poultry: Practical research and field Studies on management techniques to improve litter quality in broiler houses. **(Home Grown)** Projects highlighted water conservation, building raised garden beds, growing fruits and vegetables, using pesticides safely, composting, beneficial insects, and pruning fruit producing plants.

Forage Focus Program: A total of 63 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:** A state-wide conference was held focusing on tools and information needed to remain viable in the cattle business. Three breeding bull, 5 replacement heifer sales and 5 feeder calf sales held. In total, 19 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 a 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 two years and is now the premier networking event for this industry in Alabama. **Agronomic Crops Program:** Extension specialists, regional agents, and county coordinators participated in over 144 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:** ACES specialists and agents conducted workshops, forums, farm tours, field days and a multistate conference. These activities placed emphasis on meat goat and hair sheep production systems and focused on reproductive and genetic evaluations, feeding and nutrition, forage management, use of FAMACHA® chart, fecal-egg counts, and integrated gastrointestinal parasite management. Other topics included small-scale meat rabbit production, pasture-raised chickens, grass-fed beef cattle and ethnic vegetable production. The programs included presentations and demonstrations. Additionally, specialist and faculty associated with the AEFSN provided practical and easy to understand publications about goats, sheep, rabbits and, poultry and specialty vegetables. **Catfish Culture Industry Analysis Workshops;** Catfish producer information workshops, catfish yield verification studies and a best management practices booklet and DVD were produced; Recreational pond management workshops, youth angler events, and a 5-day

teacher workshop for aquaculture were held. Specialists participated and helped facilitate coastal community activity in the National Working Waterfront Network.

2. Brief description of the target audience

Poultry Industry: Poultry industry personnel and broiler farmers.

Home Grown: Residential gardeners growing for their families or as small producers at local farmers' markets

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

Agronomic Crops Program: The activities of the Agronomic Crops Program Priority Team reached the following groups of stakeholders: 1) row crop and fruit-vegetable producers and their representatives groups that include, but are not limited to, the Alabama Cotton Commission, Alabama Peanut Commission, Alabama Soybean Producers, and Alabama Wheat and Feed Grains Committee; 2) row crop, timber, forage, fruit-vegetable advisors including ACES agents and specialists, ACES county coordinators, ACES risk preparedness specialists, public and private crops advisors; 3) agriculture and forestry equipment dealers and input supplier organizations; 4) governmental agency personnel including USDA, NRCS, and State of Alabama Soil and Water Conservation Committee; and 5) private citizens impacted by policies and practices used for the production of food, fuel, and fiber. All educational programming efforts targeted audiences without exclusion or discrimination, as specifically defined by ACES policy guidelines.

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.

Aquaculture industry; recreational pond owners and managers; coastal community developers, leaders, and waterfront workers; Middle and high school educators and students; Youth and adult anglers.

3. How was eXtension used?

eXtension was not used in this project. Poultry

eXtension was not used in this project. Home Grounds

eXtension was used as a resource for forage information as well as targeted webinars on relevant topics for beef and forage producers.

The Fire Ant Program, to which all REAs belong, is an eXtension project that has raised awareness about and adoption of management tactics for reducing fire ants. REAs also participate in webinars organized by eXtension Urban Program for professional development.

Current news topics along with ask the expert responses were provided for posting to various eXtension sites related to crop production and technology.

Alabama Ethnic Food Security Network: eXtension was not used in this program.

Specialist contributed a presentation to aquaculture webinar.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	44894	20144831	1896	86398

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	39	14	53

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 Book Copies Sold in Alabama Ethnic Food Security Network Program

Year	Actual
2013	150

Output #3

Output Measure

- Number of Workshops to Increase farmers knowledge in efficient and profitable methods of goat, sheep, and specialty vegetable production
Not reporting on this Output for this Annual Report

Output #4

Output Measure

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

Year	Actual
2013	5

Output #5

Output Measure

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

Year	Actual
2013	6

Output #6

Output Measure

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

Year	Actual
2013	144

Output #7

Output Measure

- Number of Publications for Integrated Pest Management Adoption

Year	Actual
2013	34

Output #8

Output Measure

- Increase in Viable Forestry and Wildlife Committees
Not reporting on this Output for this Annual Report

Output #9

Output Measure

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

Year	Actual
2013	2

Output #10

Output Measure

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

Year	Actual
2013	12

Output #11

Output Measure

- Number of Youth Education Events to Increase Public Understanding of Water Conservation

Year	Actual
2013	6

Output #12

Output Measure

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

Year	Actual
2013	1

Output #13

Output Measure

- Public Awareness Campaign to Encourage Understanding of Coastal Environmental Issues

Year	Actual
2013	1

Output #14

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
2013	49

Output #15

Output Measure

- Number of Value Added Marketing Events to Increase Producer Knowledge Through Comprehensive Programming for Livestock and Equine Owners on Sustainability of Production, Proper Care and Appropriate Marketing Options

Year	Actual
2013	9

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	Alabama Ethnic Food Security Network
16	Broiler Litter Management - Effort in 2013 involved speaking to broiler grower groups through Alabama Poultry and Egg Association regional and state-wide programs about improving bird health and productivity through improved litter management. In addition, articles in popular press magazines (including the Alabama Poultry and Egg Magazine) advanced knowledge in this area.
17	Integrated pest management adoption: IPM in home vegetable and fruit crops, #people who start/enhance their own food garden at home

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 Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	3000000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Alabama has a rising number of new/beginning farmers with 2 to 4 acres land. These new specialty crop producers need training and continuous information about production methods, pest management, food safety, and marketing of crops. Experienced producers (typically with 10 to 25 acres) are also given information via newsletters, phone calls, and direct site visits which is critical service to the industry. Without pest management training, crop losses in specialty crops averages about 40 to 90% (results from demonstration plots) which will be disastrous to the farming industry. In 2012, ACES developed the statewide organic farming campaign which is

ongoing due to heavy demand from producers and involves all steps leading to more a sustainable agriculture system.

What has been done

ACES Commercial Horticulture Program consisting of many Extension Specialists (ES) and 7 regional Extension agents (REAs) conducted over 219 workshops, 39 demonstrations and over 500 on-site visits across Alabama that resulted in directly training 6,605 attendees. Rural audiences include fruit, vegetable and turf producers comprised 80% of the total. Cucurbit sentinel plots and insect pheromone traps were used to monitor critical disease and insect pest species. Information about production issues, disease and insect outbreaks was continuously provided to producers via newspaper/magazine articles (39+), radio/TV announcements (39), Extension news releases (15), IPM newsletter (1300 subscribers, 17 issues) posted on websites, blogs and social media channels (4).

Results

Specialty crop producers in Alabama are in great need of research-based information based on the increasing number of participants at meetings. Compared to 2011, grower participation in the Extension events has gone up 40% in 2013. Other impacts include small berry producers directly benefited from the training about invasive insects that saved \$10,000 to \$72,000 on certain farms by developing IPM plan for farmers. Information from cucurbit sentinel plots was used by producers with nearly \$10,000 in cost saving per adoptive farm. Vegetable producers can lose about 40 to 70% crop without using IPM practices (overall impact is about \$3 to 4 million). An impact video for Alabama Vegetable IPM program was produced.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

Adoption of row crop production practices that are sustainable and profitable

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
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2013 30500000

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, e-mail, phone and farm press are also used to disseminate timely news to farmers and crop consultants.

Results

Extension programming increased soybean profitability by \$45/acre in North Alabama. Proper selection of a top yielding cotton variety based on farm trials increased cooperating producer's income in Central Alabama by \$145/acre. Proper identification, product selection, and timely treatment of stinkbug in cotton, peanut and soybean increased gross cotton receipts \$18,000,000. Recommendations by an REA on 25,000 acres of cotton resulted in improving gross income by \$500/acre totaling \$12,500,000. Irrigation programming has led to improved scheduling protocol by Alabama farmer with estimated water savings of 5% to their operations. Farmers which attended the Sprayer Clinic indicated they purchased new nozzle packages for specific pesticide applications, providing a value of \$22/ac. Subscribers indicated that Profit Profiles had a value of \$10 per month.

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

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	27

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 are 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

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
311	Animal Diseases
601	Economics of Agricultural Production and Farm Management

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	100

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 about 12 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. Specialists completed an online calculator designed to determine the fatness of fish collected. We maintained the Alabama Extension Fisheries and Pond Management Facebook Page by creating more than 200 posts of original and shared material. Specialists completed a TV episode for a local outdoor show on pond management. 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
123	Management and Sustainability of Forest Resources
134	Outdoor Recreation
135	Aquatic and Terrestrial Wildlife
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems
311	Animal Diseases

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	2013

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

Six 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.

One educational event was held in cooperation with a Boy Scout group to provide the necessary activities needed for the scouts to earn their fishing merit badge.

Results

Ten boy scouts completed their training needed to obtain their merit badges in fishing

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
134	Outdoor Recreation

135 Aquatic and Terrestrial Wildlife
806 Youth Development

Outcome #11

1. Outcome Measures

Increase 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

Year	Actual
2013	20

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 25 people. Three state specialists conducted 33 school visits to provide technical support and instruction. Two thousand tilapia fingerlings were supplied to schools for aquaculture projects. Six aquaculture videos were produced and placed on youtube where they received 2,456 views. An additional 5 videos were produced and distributed on DVD. Specialists provided input and updates for the education section of our web site which received 470,054 page views

Results

Teacher workshop pre/post testing indicated that teachers increased their aquaculture knowledge by 20%. 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 by people in 91 countries providing broad reach of our expertise.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
135	Aquatic and Terrestrial Wildlife
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
307	Animal Management Systems
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection
806	Youth Development

Outcome #12

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

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 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. 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

KA Code	Knowledge Area
134	Outdoor Recreation
601	Economics of Agricultural Production and Farm Management

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	969255

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. In 2013, the statewide forage conference was held. Several one-day hands-on workshops were conducted on grazing, haylage/baleage, forage pests and hay production. Six demonstration/research forage plots were established as well as 49 regional/county meeting conducted. Additionally, a webinar series (n=6) was established concentrating on current forage topics and forage pests as well as publications (n=4), you-tube videos (n=1) and timely information sheets (n=2).

Results

From surveys conducted at beef forages and weed identification meetings, 84% of participants planned to change beef operation practices due to knowledge gained from the meetings. Additionally, participants suggested they were going to incorporate improved varieties of forages when re-planting pastures and hayfields. Given the emphasis on forages production the past three years, participants who had previously attending forage programs indicated they are utilizing soil and hay test results to reduce the impact on the environment by not overlapping fertilizer or pesticides. Results from the two (2) one-day livestock grazing clinics showed 140 acres per participant would be impacted by improved grazing management. Attendees (n=50, 63%) indicated they would definitely adopt new practices learned at the clinics with 40% suggesting rotational grazing techniques would be their first implemented practice. Statewide forage conference attendees (n=181, 7 states) determined the overall value of the information presented was \$969,255. Through forage demonstrations, it was determined by implementing control procedures for bermudagrass stem maggot, producers can save \$11,200/40 acres.

4. Associated Knowledge Areas

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

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	8300000

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 2013. Five value-added feeder calf marketing events were held with educational assistance by ACES personnel. Four 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=5) represented 6,000 head of Alabama bred and raised feeder calves weighing over 4.3 million pounds worth over \$6.1 million. Producers utilizing proper management and health protocols realized on average \$99.51/head more in marketing in these sales over weekly auction sales. This amounts to \$597,000 additional revenue in producers' pockets. Bulls marketed via BCIA marketing events had an overall gross of \$680,950 with an average price per bull of \$3,290. Bred heifers (n=237) were marketed for an

overall gross of \$425,325 with an average price per bred heifer of \$1,795. Open heifers (n=60) were marketed for an overall gross of \$67,305 with an average price per open heifer of \$1,122.. Overall economic impact of \$1,173,580 from 504 head of breeding animals marketed. Producers marketing bred replacement females through these marketing opportunities have indicated an estimated \$400 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
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
315	Animal Welfare/Well-Being and Protection
601	Economics of Agricultural Production and Farm Management

Outcome #15

1. Outcome Measures

Alabama Ethnic Food Security Network

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	749

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Alabama Ethnic Food Security Network

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 have tremendous opportunities to diversify, expand, and supply the growing demand for a number of multicultural foods. In order to remain competitive in today's market, Alabama farmers and marketers must keep pace with increasingly market segment needs. Meats such as

goat and lamb are not only popular among Hispanics, but also among Caribbean Islanders and Middle Easterners. Vegetables such as peppers and eggplants are very popular among Hispanics as well as Asians. Furthermore, research data indicates that more and more Americans are changing their tastes in favor of new multicultural flavors and foods. Despite this increasing interest in multicultural dining, the public is unable to experience more of a variety of ethnic meals at home because of limited availability of high quality, authentic multicultural foods. However, to ensure that farmers increase availability of a number of safe ethnic food ingredients, educational resources in alternative animal and vegetable production and technological advances were needed.

What has been done

Alabama Ethnic Food Security Network

In an effort to help Alabama farmers increase the availability of a number of multicultural food ingredients in an efficient and profitable way, ACES provided broadly-based and objective information about sheep and goats and, to some extent, specialty vegetables and their impact on Alabama's economy and natural resources. Besides carrying out an array of outreach activities (See Planned Program (Activity)), Animal Science specialists and agents from the Urban Affairs and New Nontraditional Program Unit of ACES sold over 150 copies of their book titled "Meat Goats: Reproduction, Nutrition, and Health" to help farmers who are raising meat goats to become more knowledgeable and successful in this particular enterprise. During 2013, copies of this book, which is only available in print, were sold to farmers in the North Alabama area and the Black Belt region. Extension Animal Science specialists also distributed many copies of their manual titled "Small-Scale Commercial Rabbit Production", which enjoyed a great popularity among growers in the Southeast and overseas.

Additionally, to help farmers in Alabama increase production of safe lamb and goat meat, Animal Science specialists and agents from the Urban Affairs and New Nontraditional Program Unit of ACES provided broadly-based and objective information about biosecurity measures and food safety schemes.

Results

Alabama Ethnic Food Security Network

Alabama goat and sheep producers have become more knowledgeable and stayed open to new and different management practices that allowed their operations to be more productive and profitable. Sign-in sheets showed that a total of 689 goat and sheep producers attended educational activities carried out and/or sponsored by ACES agents and specialists associated with the Alabama Ethnic Food Security Network (AEFSN). Post surveys indicated that 98% of respondents gained knowledge as a result of the educational activities. Moreover, 78.2% of respondents reported increases in production efficiency, 69.5% reported improvements in herd health, and 58.5% reported increases in profitability ranging from 1 to 20%.

Additionally, youth from the Academy for Science and Foreign Language (ASFL) in Huntsville, Alabama have become more knowledgeable about vegetable production. Sign-in sheets showed that a total of 60 elementary school students attended educational activities carried out and/or sponsored by ACES agents and specialists associated with the AEFSN. Quantitative outcomes showed ASFL students grew and harvested about 15 lbs. of collard and turnip greens, which were cooked by lunch room staff and consumed by students themselves.

The AEFSN at Alabama A&M University (AAMU) plans to continue to provide leadership in this particular program area and to be the premier lifelong education network that helps Alabama farmers improve the efficiency of sheep, meat goat, rabbit, and ethnic vegetable production.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
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 #16

1. Outcome Measures

Broiler Litter Management - Effort in 2013 involved speaking to broiler grower groups through Alabama Poultry and Egg Association regional and state-wide programs about improving bird health and productivity through improved litter management. In addition, articles in popular press magazines (including the Alabama Poultry and Egg Magazine) advanced knowledge in this area.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	10000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Poultry Industry Personnel and broiler farmers are keenly interested in improving litter quality to maintain and improve broiler health and welfare.

What has been done

Effort in 2013 involved speaking to broiler grower groups through Alabama Poultry and Egg Association regional and state-wide programs about improving bird health and productivity through improved litter management. In addition, articles in popular press magazines (including the Alabama Poultry and Egg Magazine) advanced knowledge in this area.

Results

Extension efforts supporting windrow composting usage in the state were adopted by the industry as one tool to reduce the incidence of Laryngotracheitis. The incidence of this important respiratory disease dropped from 300 cases per year to 3 cases in the state last year. Technical support for the use of litter treatments to reduce ammonia in broiler houses has been implemented by well over half of all growers in the cooler months. These efforts reduce respiratory disease and lower energy costs for growers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #17

1. Outcome Measures

Integrated pest management adoption: IPM in home vegetable and fruit crops, #people who start/enhance their own food garden at home

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	1194

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

General audience for the Vegetable IPM information includes new and experienced producers, crop consultants, retailers, and gardeners. Experienced producers have 10 to 25 acres under production whereas new small farms are about 2 to 5 acres. 80% of experienced producers and crop consultants use Extension publications like the vegetable handbook. Participation in the IPM program has increased four times since 2010.

What has been done

Vegetable IPM program outputs (publications) include revision of IPM Handbook, 30 Extension bulletins and news releases, 3 promotional items (bookmarks/magnets), 5 training videos and 2 training modules for producers. The vegetable IPM website gets 107 hits per day during peak season. Facebook and Twitter accounts are utilized to disseminate IPM information (300+ subscribers). In 2013, the vegetable IPM program directly trained about 1194 participants which is a 40% increase compared to 2011. The IPM program trains producers via presentations (18),

hands-on workshops (9), and field days (6). IPM exhibitions at major regional conferences (5) results in outreach to 4,175 participants

Results

Vegetable IPM program: Survey return rate was 61% (n=198) for conventional/large farm IPM and 48% (n=417) for new/small farm IPM campaign. Overall, the audience includes 80% producers, 14% gardeners, 4% state agencies, and 2% crop consultants. IPM training results in 50% increase in IPM knowledge and 55% increase in confidence with 36% adoption rate on average. Nearly 80% of experienced producers use IPM recommendations and depend on telephonic or on-site consultation with Specialist and REAs. IPM newsletter is used by 47% of respondents. 60% of trained producers use website for IPM decision-making. Satisfaction rating from IPM training was 97%. The IPM program has received two awards each from the Southern Region IPM Center and the National Association of County Agric. Agents for impactful programming.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Although the majority of American farmers are still at the mercy of both economic factors and the weather, farmers may be reluctant toward adopting new animal husbandry practices or making changes in cropping decisions. Furthermore, to have a statewide comprehensive program, additional training activities focusing on small ruminant, meat rabbit, pasture-raised chickens, and specialty vegetable production must be made available to all interested individuals across Alabama. Therefore, it is imperative to increase participation of other Extension professionals and increase the number of integrated outreach educational activities, especially in South Alabama.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

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.
- * Increased food safety and hygiene.

Key Items of Evaluation

Comm Hort: Vegetable IPM Program (Auburn University): The IPM program separately evaluates the conventional/large farm and new/small farm IPM campaigns separately. Survey methods include paper-based instruments, online (delayed) surveys, telephonic interviews and on-farm observations, and pre/post-tests. Survey return rate is 61% (n=198) for conventional/large farm IPM and 48% (n=417) for new/small farm IPM campaign. In addition, the IPM program evaluated program effectiveness at third-party events that provides consistent evaluation of technology adoption rates.

Alabama Ethnic Food Security Network: As a result of the educational activities, the following quantitative outcomes (based on post surveys) were achieved:

335 goat and sheep producers gained knowledge of key production management practices. 96 goat and sheep producers observed improved production efficiency. 79 goat and sheep producers observed improved animal health and well-being. 67 goat and sheep producers reported increased profitability rates ranging from 1 to 20 percent. 51 goat and sheep producers reported sale prices ranging from \$1.00 to \$1.90 per pound and sale revenues ranging from \$1,000 to \$20,140. 29 small-scale and part-time farmers reported cattle prices ranging from \$0.90 to \$1.25 per pound and cattle sale revenues ranging from \$1,350 to \$4,000. 60 elementary school students grew, harvested and consumed about 15 lbs. of collard and turnip greens.

Aquaculture: Teacher workshop pre/post testing indicated that teachers increased their aquaculture knowledge by 20% with remarks indicating universal satisfaction with the training and plans to implement programs in their classrooms. In the recreational fish pond workshops where pre-post testing occurred participants on average more than doubled the percentage of correct answers after attending the workshop.

Animal Science: Value-added feeder calf marketing opportunities (n=5) represented 6,000 head of Alabama feeder calves weighing over 4.3 million pounds worth over \$6.1 million. Producers realized on average \$99.51/head more in marketing in these sales over weekly auction sales. This amounts to \$597,000 additional revenue for producers. Overall economic impact of \$1,173,580 from 504 head of breeding animals marketed. Producers marketing bred replacement females through these marketing opportunities have indicated an estimated \$400 per head net gain over expenses and opportunity costs.

Crops: Extension programming increased soybean profitability by \$45/acre in North Alabama. Proper selection of a top yielding cotton variety based on farm trials increased cooperating producer's income in Central Alabama by \$145/acre. Proper identification, product selection, and timely treatment of stinkbug in cotton, peanut and soybean increased gross cotton receipts \$18,000,000. Recommendations by an REA on 25,000 acres of cotton resulted in improving gross income by \$500/acre totaling \$12,500,000.