V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Global Food Security and Hunger

☑ 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
205	Plant Management Systems	20%	10%		
216	Integrated Pest Management Systems	15%	0%		
301	Reproductive Performance of Animals	10%	15%		
302	Nutrient Utilization in Animals	10%	20%		
303	Genetic Improvement of Animals	5%	10%		
307	Animal Management Systems	20%	20%		
311	Animal Diseases	10%	15%		
315	Animal Welfare/Well-Being and Protection	10%	10%		
	Total	100%	100%		

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	23.0	4.5	0.0	0.0
Actual Paid Professional	43.8	3.3	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**
1474153	132219	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
984877	132219	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
5127113	240525	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Alabama Ethnic Food Security Network

In 2012, the Urban Affairs and New Nontraditional Programs (UANNP) Unit agents and specialists associated with the Alabama Ethnic Food Security Network (AEFSN) conducted and/or participated in nine (9) workshops, six (6) field days, three (3) seminars, one (1) forum and one (1) multistate conference held in Alabama, Florida, Tennessee, Oklahoma, Illinois and the country of Haiti. These outreach activities placed emphasis on sheep and goat production systems and focused on areas such as reproductive and genetic evaluations, nutrition, forage management, use of FAMACHA chart, fecal-egg counts, integrated gastrointestinal parasite management, and biosecurity measures. Other topics of focus included small-scale meat rabbit production, pasture-raised chickens, specialty vegetable production, and food safety procedures. The programs included presentations and demonstrations by in- and out-of-state experts from academia and government while sponsors included the Alabama Cooperative Extension System (ACES); Alabama Farmers Federation (ALFA); Alabama Mountains, Rivers and Valleys RC&D Council; Alabama Agricultural A+ Marketing Association; National Center for Foreign Animal and Zoonotic Disease Defense (FAZD); United States Agency for International Development (USAID) Farmer to Farmer Program; Tennessee State University; and Oklahoma State University.

Forage Focus Program

Animal Science and Forages Regional Agents and County Coordinators developed and conducted a total of 73 forage related programs in 2012. These programs included four (4) grazing management clinics, five (5) grazing field days, three (3) GrassMasters programs with four (4) meetings each, one (1) hay school, one (1) horse grazing field day, one (1) multi-state tour and 52 multi-county meetings addressing soil fertility, weed control, pest control, soil testing, forage varieties and haylage/balage considerations. Additionally, eight (8) on farm demonstrations were conducted examining the efficacy of various herbicides for controlling or eliminating weeds in hay fields and pastures. Another on farm demonstration program allowed producers to monitor for army worm infestation and report incidences of this forage destroying pest.

Beef Cattle Performance and Marketing Programs

In 2012, two (2) state-wide conferences were held for cow-calf producers focusing on tools and information needed to remain viable in the cattle business. Additionally, there were two (2) bull evaluations conducted, and five (5) bull and replacement heifer sales and five (5) feeder calf sales held. Continued emphasis was placed on the need for commercial producers to collect and utilize performance records on calves to ascertain genetic quality of cows and calves.

Partners for the Forage Focus and Beef Cattle programs included ACES, ALFA, Alabama Cattlemens Association, and NRCS

Aquaculture, Fisheries, and Coastal Resources. Our team activities involved support of the aquaculture industry, providing analyses, new techniques, and increased efficiencies in all aspects of catfish production, processing, and marketing. We provided educational efforts which have allowed aquaculture to be integrated into the middle and high school curricula in 40 - 60 schools in Alabama. In fisheries, we have provided workshops, publications, and reactive services in recreational pond management and angler education. Our team is involved in investigating the causes of toxic algal blooms and the spread of invasive aquatic species. Our coastal specialists and agents have worked with the local communities to improve their resiliency to natural and man-made disaster and maintain the economic viability of working waterfronts. Commercial oyster culture and restoration of reef through citizen oyster gardening have been successful programs within our team. We use the full spectrum of delivery approaches from traditional publications and workshops to internet delivery and social media.
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2. Brief description of the target audience

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.

Forage Focus Program

The primary target audience were cattle, equine and hay producers interested in developing improved production of their forages to decrease dependence on stored feeds

Beef Cattle Performance and Marketing Programs

The primary target audience were beef cattle producers interested in sustainable and profitable operations.

Aquaculture, Fisheries, and Coastal Resources

Audiences include recreational pond owners, anglers, members of the commerical aquaculture industry including producers, processors, and marketers, coastal community leaders, and teachers involved in including aquaculture and aqua-science in secondary and high school curricula. In the general sense our target audience invoves the entire public due to our support of maintaining high quality sustainable water resources.

3. How was eXtension used?

eXtension was used as a resource for forage information as well as targeted webinars on relevant topics for beef and forage producers. Our aquaculture and fisheries specialists participated in the freshwater eXtension CoP providing expert answers to submitted question and participating in relevant webinars.

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	8114	752355	3031	204611

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

Patent Applications Submitted

Year:	2012
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	6	1	7

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 Extension Team Projects (ETPs) which are described/explained 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 ETPs for this program area that will be formally evaluated using an evaluation instrument designed specifically for that activity.

Year	Actual
2012	20

Output #2

Output Measure

- Pond Management workshops

Year	Actual
2012	14

Output #3

Output Measure

- Harmful Algal bloom trainings

Year	Actual
2012	2

Output #4

Output Measure

- Oyster gardening newsletter and videos

Year	Actual
2012	16

Output #5

Output Measure

- Aquaculture Pond-to-plate workshops and LEAN manufacturing exercises

Year	Actual
2012	6

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 Extension Team 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	Aquaculture Aquascience Education - increased appreciation of both aquaculture and aquatic natural resources by students and teachers

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 Extension Team 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. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1206

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), UANNP Unit Animal Science specialists and agents sold over 300 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 2012, 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 and Illinois increase production of safe lamb and goat meat, and help restaurants in Haiti implement food safety practices and procedures that prevent foodborne illnesses, ACES provided broadly-based and objective information about biosecurity measures and food safety schemes. Besides carrying out educational activities, UANNP Unit Animal Science specialists developed and distributed fact sheets to help farmers in Alabama and Illinois and the food service industry in Haiti deliver safe, healthy food products to consumers.

Results

Alabama Ethnic Food Security Network:
Alabama sheep and goat 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 533 sheep and goat producers attended educational activities carried out and/or sponsored by UANNP Unit agents and specialists associated with the AEFSN. Post surveys indicated that 90% of the participants gained knowledge as a result of the educational activities. Furthermore, 72.5% of the participants reported increases in production efficiency, 63.5% reported improvements in herd health, and 53.5% reported increases in profitability ranging from 1 to 15%.

Additionally, small-scale and limited-resource farmers in Alabama and Florida have become more knowledgeable about meat rabbit production, pasture-raised chickens, and ethnic vegetable production. Sign-in sheets showed that a total of 30 Alabama farmers and 25 Florida farmers attended educational activities carried out and/or sponsored by UANNP Unit specialists and agents associated with the AEFSN. Post surveys indicated that as a result of the educational activities 85% of the participants gained knowledge of fundamental rabbit production, while 95% of the participants gained knowledge of pasture-raised poultry and specialty vegetable production.

Also, small-scale and limited-resource farmers in Alabama and Illinois and restaurant employees in Haiti became more knowledgeable about biosecurity measures for sheep and goats and food safety procedures that prevent foodborne illnesses. Sign-in sheets showed that a total of 600 farmers, mostly from the Southeast, and employees from 18 restaurants in Cap Haitien, Haiti attended outreach activities carried out and/or sponsored by UANNP Unit specialists associated with the AEFSN. Post surveys indicated that as a result of the educational activities 100% of the participants gained knowledge of biosecurity measures to prevent zoonosis and foreign diseases of sheep and goats, while 89% of the restaurants implemented some form of food safety and food

hygiene protocol.

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 #2

1. Outcome Measures

Aquaculture Aquascience Education - increased appreciation of both 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
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
This program contributes to K-12 science education curricula. Educators in and subsequently students in Middle and High schools will benefit from the training and materials produced.

What has been done
Teacher training events, routine support services, literature and digital resources produced.

Results

?Knowledge as measured using pre and post testing increased for teachers participating in the 2012 training from 46% pre-training to 70% correct post-training.
?Participants of the training workshops rated the usefulness of the topics covered at 4.3 out of 5. For the information gained the participants estimated that on average they would be willing to about $370 and that the materials provided them was worth $440.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Competing Programmatic Challenges

Brief Explanation

Alabama Ethnic Food Security Network

Similar to other commercial agricultural enterprises, meat goat and sheep producers as well as small-scale and limited-resource producers of meat rabbits, all natural chickens, and specialty vegetables are also locally impacted by Extension through its' Regional Extension Agents, who handle questions, supply information, and conduct training in a wide variety of subject matter areas. 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, future plans include encouraging participation of other Extension professionals and increasing the number of integrated outreach educational activities.

Forage Focus Programs

There is greater interest in proper management of forages and hay fields due to extended droughts and rising input costs (fuel and fertilizer for land; feed for animals). This has prompted producers to take another look at production methods not extensively used in Alabama previously. Two such practices are the proper production of silage and haylage/balage for beef cattle. These high quality feeds can replace the need for higher priced grains or grain by-products and still meet the nutritional needs of the cow herd. Producers are also more vigilant on controlling weeds, army worms and fireants since they also reduce the amount of forages produced in hay fields and pastures. Attendence at programs and demand for further information has been high.

Beef Cattle Performance and Marketing Programs

Again, because of rising costs and continued drought, beef cattle producers were willing to attend and participate in statewide conferences focusing on management strategies to keep them in business. Also, there was increased participation by purebred producers in bull sale opportunities due to willingness of commercial producers to purchase quality, performance bulls at higher prices.

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.

Forage Focus Programs

- Increased knowledge of forage production and management practices
- Adaptation of techniques on farms to increase forage availability

Beef Cattle Performance and Marketing Programs

- Improved knowledge of production and factors affecting profitability
- Increased marketing knowledge and factors affecting price

Key Items of Evaluation

Alabama Ethnic Food Security Network

As a result of the activities, the following quantitative outcomes were attained:

- 479 sheep and goat producers gained knowledge of key production management practices.
- 386 sheep and goat producers observed improved production efficiency.
- 338 sheep and goat producers observed improved herd health and well-being.
- 285 sheep and goat producers reported increased profitability rates ranging from 1 to 15 percent.
- 600 small-scale and limited-resource farmers from Alabama and Illinois gained knowledge of biosecurity measures that prevent zoonosis and foreign diseases of sheep and goats.
- 29 small-scale and limited-resource farmers from Alabama gained knowledge of pasture-raised chickens and ethnic vegetable production.
- 21 small-scale and limited-resource farmers from Florida gained knowledge of basic rabbit production.
- 16 restaurants in Haiti implemented some form of food safety and food hygiene protocol.

Forage Focus Programs

There were 133 producers who attended one of four Alabama Grazing Management Clinics sponsored by ACES, NRCS and local Soil and Water Conservation Districts. Producers reported they were very likely to adopt imformation gained from attending the grazing clinics especially in fencing and rotational grazing areas. An average of 95 acres are expected to be impacted by these changes in management per participant for an impact total of 12,635 acres. Participants projected an economic value of the information received and knowledge gained by attending the clinic as $3799 per particpant with a $75 registration fee.

Through pesticide training meetings, 88.4% stated that they increased their knowledge on restricted-use pesticide requirements, recognizing pests, pesticide labels,

pesticide formulations, pesticide safety, pesticide handling, calibrations and Federal and State laws for pesticides. All participants said they would share the information with family, other producers, landowners or employees and 97.4% said they would make changes in production practices due to the program.

The sweep net army worm surveillance program saved $3.3 million worth of forage grass in 2012. Each cattleman using a sweep net saved an average 64 A of forage on his farm by finding fall armyworms early, and helped an average 4.6 other cattlemen find fall armyworms, resulting in 358 A saved per sweep net. It is estimated that the 100 sweep nets given to cattlemen saved 35,800 A of forage grass in 2012. Additionally, Extension personnel assisted producers in saving 10,752 A of forage grass giving a total impact of 46,552 A of forage grass protected from fall armyworms.

Beef Cattle Performance and Marketing Programs

Through continued support of recording and utilizing performance records on commercial cattle, Alabama can characterize feeder calves to potential buyers. This has allowed producers marketing feeder calves in organized Alabama feeder calf sales to realize an average of $72.16 more per head over other calves sold at weekly auction. This is above the calculated economic impact for buyers of purebred bulls (n=203 bulls sold in 2012) that produce feeder calves ($20/calf).