

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

#### Program # 4

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

Global Food Security and Hunger - Agriculture

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
202	Plant Genetic Resources		5%		10%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants		12%		10%
205	Plant Management Systems		12%		8%
211	Insects, Mites, and Other Arthropods Affecting Plants		6%		0%
213	Weeds Affecting Plants		10%		0%
301	Reproductive Performance of Animals		5%		5%
302	Nutrient Utilization in Animals		6%		5%
307	Animal Management Systems		0%		10%
311	Animal Diseases		10%		7%
502	New and Improved Food Products		4%		5%
601	Economics of Agricultural Production and Farm Management		5%		13%
602	Business Management, Finance, and Taxation		12%		0%
603	Market Economics		0%		10%
610	Domestic Policy Analysis		5%		7%
701	Nutrient Composition of Food		4%		5%
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures		4%		5%
	<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>	0.0	5.0	0.0	6.5
<b>Actual Paid</b>	0.0	12.0	0.0	15.0
<b>Actual Volunteer</b>	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
0	708213	0	1107873
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	949685	0	955638
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

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

**1. Brief description of the Activity**

- The Small Farm Program staff assisted approximately 184 Small and Socially Disadvantaged Farmers (SSDF) in signing-up for USDA Programs including the operating and farm ownership loan programs, EQIP, CSP, LFP, the Noninsured Assistance Program (NAP), Good Agricultural Practice (GAP) Program, USDA/RD Housing Programs, and the crop insurance program.
- Winter and summer forage experiments were conducted with cattle and goats in the same pasture to find alternatives to feeding hay when little or no forage is growing. During the winter, wheat, rye and barley were inter-seeded with crimson clover and hairy vetch or rape. In the summer, sorghum sudangrass was inter-seeded with cowpeas and soybeans or rape to determine the most suitable combinations for animal nutrition.
- Nine workshops (5 gastrointestinal parasite management, 2 beef cattle management and 2 youth workshops with small ruminants) were conducted to educate SSDF about the use of FAMACHA scoring, fecal egg counting and proper use of chemical dewormers to reduce the development of resistance, cost of medicine and losses due to gastrointestinal parasites.
- Five Gladiolus genotypes were studied to determine which genotype was profitable for production in Southeast Arkansas. Flower spikes were placed in 5, 10, and 15 mg solution of sucrose, fructose or glucose for 10, 20, 40 or 60 minutes to evaluate vase life. Another study was conducted to see the effect of GA3 (75 and 100 ppm) and Ethrel (100 and 200 ppm) on vegetative growth, reproduction and chemical constituents of gladiolus.
- The sweet potato Foundation Seed Program provided virus indexed sweet potatoes through shoot meristem culture for greenhouse production. Subsequently the virus indexed sweet potatoes were planted in the field to provide foundation seed potatoes to SSDF.
- Two studies were conducted to determine the effect of N fertilizer and use of micronutrient fertilizers on yield of sweet potatoes following a winter cover crop that is used to protect and conserve the soil in a conventionally tilled field.
- Two cowpea cultivars (UAPB-1 and UAPB-2) were increased as foundation seeds by planting in 20 X

200-ft plots at the Pine Bluff and Lonoke experiment stations. The plots were thorough rouged and produced 40-50 lbs. foundation seed of each cultivar.

- A field day was held at the Lonoke experiment station to showcase research that is being done at the station. In addition to the 300 plus participants, the event was seen by thousands as a result of filming and subsequent broadcasting by the University's television station (KUAP). Many positive comments have been received as a result of the broadcasts.

- 12 conventional cultivars and 12 hybrid breeding lines were selected from our previous studies for evaluating straighthead resistance in an infected silt loam soil at the UAPB experiment station. Ca<sub>2+</sub> was used in a greenhouse study on soil where straighthead had naturally and repeatedly occurred in the past years.

- The PI working with textiles continued to review literature on major bio-based and sustainable fibers (alpaca, organic cotton, hemp, recycled polyester, and linen/flax); attended a Climate Change and Apparel & Textiles Education Workshop; presented a related paper at an international conference; and interviewed alpaca breeders at the Alpacas in the Ozarks show as a case study.

- A new project was initiated on vegetable and fruit production by students who are mentored by SSDF and university personnel. Two meetings were facilitated with the advisory team; a plot design has been formulated; an undergraduate Agricultural Business student has been hired; and the student attended a vegetable production workshop.

Data analysis and manuscripts writing

Conduct fish nutrition research and disseminate results to target audiences

Research activities focus on methods to reduce hydrogen sulfide concentrations in baitfish production ponds, and methods to destick goldfish eggs from spawning substrate. Extension efforts focus on water quality and dissemination of research materials to the producers.

Research activities focus on develop of new production system (split-pond) and on an indoor hatchery system for fathead minnows. Extension efforts focus on aquatic invasive species prevention, water quality and quantity, and regulatory issues.

Activity will include monitoring the diseases cases that come through the lab and being prompt in correctly identifying specific problem.

Prompt diagnosis of fish diseases, water quality analyses and routine health checks will be performed.

- 1) Active communication with baitfish farmers and research and extension scientists.
- 2) Development of research grants.
- 3) Development of a prototypeSPS with a sluiceway screenand field applications.
- 4) Public demonstration and presentationof research results.
- 5) Publication of research results in scientific journals.
- 6) Utilizationof research resultsas teachingmaterials.

Working with farmers to determine appropriate herbicides and then calculating rates and appropriate application methods.

Weekly visits to each verification ponds will be made where samples are collected for

analyses. Additionally, stocking and harvesting will be given assistance.

Research activities will focus on commercial production methods of crappie. Extension efforts focus on dissemination of research materials to the producers.

Conduct fish nutrition research and disseminate results to target audiences

Updating the aquaculture alternative fact sheet. Answering requests for information. Helping current farmers of alternative species, particularly Arkansas turtle farmers.

Activities consist of research studies in the laboratory and on the experiment station, on-farm research trials, extension farm visits, calls, e-mails, newsletters, workshops, and presentations. Water quality and fish health services are provided to support educational programs. Program planning is conducted through discussions with individual farmers and with farmer associations (e.g., Catfish Farmers of Arkansas, Arkansas Bait and Ornamental Fish growers Association). Results of research studies and extension programs are shared with peers across the country at national meetings and in journals and other publications.

Data describing the efficacy of novel therapies to induce spawning will be collected and analyzed.

Evaluation of non-invasive strategies to evaluate annual reproductive cycles of finfish will include collection of digital images of catfish, largemouth bass and smallmouth buffalo.

Evaluation of hatchery fry, fingerling, food fish conditioning methodologies to enhance resistance to external environmental stress. This activity includes gaining an understanding of cellular machinery involved with the stress response, development and testing putative methods to induce favorable cellular responses, and finally assessing whole animal responses to treatment administered before exposure to acute physical and/or water quality changes.

Water quality and fish production monitoring

Activity will involve on farm visits where feeding of all ponds will be observed. Data will be analyzed and projections made.

Pond production studies

Long-term business planning support

Continued committee meetings to identify and implement an improved marketing structure

1) Active communication with baitfish farmers and research and extension scientists.

2) Development of research grants.

3) Development of a prototype SPS with a sluiceway screen and field applications.

4) Public demonstration and presentation of research results.

5) Publication of research results in scientific journals.

6) Utilization of research results as teaching materials.

Conduct fish nutrition research and disseminate results to target audiences

Much of the time spent working with the catfish industry deals with health inspections for individual lots of fish destined for other states stocking programs. The fish are required to appear in good health prior to transport.

Data for catfish study in the past few years will be collected at various UAPB aquaculture and fisheries extension stations as well as through literature review. Power analysis will be used to assess and validate the required sample sizes for a typical aquaculture experiment. Power is the probability of rejecting a false null hypothesis. A power of 80% is recommended for research (if a difference is looked for) and 95% for validation (if there is no difference).

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

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The primary audience for this program consists of Small and Socially Disadvantaged Farmers (SSDF) as

defined by the National Commission on Small Farms (\$250,000 in gross sales or less). Socially Disadvantaged Farmers are those who have been subjected to racial or ethnic prejudices because of their identity as a member of a group without regard to their individual qualities. Identified groups include: African Americans, Hispanics, Asians, American Indians or Alaska Natives, and Native Hawaiians or other Pacific Islanders. UAPB does not discriminate against any individual and services are provided to all who request it. The scope of the program has been broadened to include students and consumers of fabrics and textiles.

Baitfish farmers of Arkansas

Fish producers, feed manufacturers, researchers, recreational fishers

The target audience is commercial bait and forage fish farmers in Arkansas, Extension agents, and state regulatory agencies.

The target audience is commercial bait and forage fish farmers in Arkansas and across the nation. In many cases, research and biosecurity/fish health programs are also applicable to sportfish farms, also an important aquaculture crop.

The audience is aquaculture producers in Arkansas and the state game and fish hatchery system.

Commercial producers of aquatic animals in Arkansas, private pond owners, county Extension agents, state agencies involved in the regulation or control of aquatic animal diseases.

Commercial producers of aquatic animals in Arkansas, private pond owners, county Extension agents, state agencies involved in the regulation or control of aquatic animal diseases.

- 1) Baitfish farmers.
- 2) Baitfish and live fish marketshops.
- 3) Public school teachers and students.
- 4) State-level, national, and international research and extension scientists.

Baitfish farmer owners, managers and employees.

The audience are current producers who want to improve farm production and efficiency and other land owners searching for alternative for land use.

Aquaculture producers, Extension agents, State agencies, small pond owners

Fish producers, feed manufacturers, researchers, seafood consumers

Current farmers, potential fish farmers, county agents

Program activities were targeted towards aquaculture producers, potential producers, and farm pond owners. Aquaculture production primarily occurs on family farms; most are small businesses without resources to conduct internal research, and many find it increasingly difficult to keep informed of changing rules and regulations without assistance from extension.

The direct target audience includes commercial aquaculture entities and public agencies involved with the production of fish for enhancement purposes.

**Catfish farmers in Arkansas**

The audience is current fish producers and lending institutions in the area.

catfish farmers and processors

1) Channel and hybrid catfish farmers.

2) Live catfish haulers.

3) Public school teachers and students

4) State-level, national, and international research and extension scientists.

Fish producers, feed manufacturers, researchers, seafood consumers

Catfish farmers, live fish haulers, representative for other states.

The target audience are researchers in Aquaculture and Fisheries department as well as the catfish farmers in Arkansas.

**3. How was eXtension used?**

eXtension was not used in this program

**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>	17710	75000	45	440

**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
<b>Actual</b>	2	2	4

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

**Output Target**

### **Output #1**

#### **Output Measure**

- The number of research studies and demonstrations conducted

<b>Year</b>	<b>Actual</b>
2014	14

### **Output #2**

#### **Output Measure**

- The number of farmers provided assistance in applying for USDA programs

<b>Year</b>	<b>Actual</b>
2014	184

### **Output #3**

#### **Output Measure**

- The number of newsletters, fact sheets, etc. distributed

<b>Year</b>	<b>Actual</b>
2014	2000

### **Output #4**

#### **Output Measure**

- The number of newspaper articles published

<b>Year</b>	<b>Actual</b>
2014	56

### **Output #5**

#### **Output Measure**

- The number of field days held

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

### **Output #6**

#### **Output Measure**

- Number of presentations made

<b>Year</b>	<b>Actual</b>
2014	53

**Output #7**

**Output Measure**

- The number of workshops and training sessions conducted

<b>Year</b>	<b>Actual</b>
2014	17

**Output #8**

**Output Measure**

- Number of abstracts

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

**Output #9**

**Output Measure**

- Number of trade magazine articles

<b>Year</b>	<b>Actual</b>
2014	56

**Output #10**

**Output Measure**

- Number of factsheets and newsletters developed

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

**Output #11**

**Output Measure**

- Number of internally reviewed publications

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

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

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

O. No.	OUTCOME NAME
1	Increased economic opportunity and profitability for SSDF
2	An increase in the number of SSDF that adopt one or more Best Management Practices for crop production
3	Increase the number of farmers that develop an estate plan to reduce land loss by Socially Disadvantaged Farmers
4	Enhanced crop diversity on SSDF to increase profitability
5	Increase the number of SSDF that adopt one or more Best Management Practices for livestock production
6	Generation of new ideas/concepts for textile structures/end products from bio-fibers
7	Number of presentations, abstracts, publications, newsletter articles and other forms of delivery of research-based information to baitfish farmers, directly and indirectly
8	Number of scientists that learned what we know
9	Number of producers who learn project results
10	Financial impact of diagnostic services
11	Value of aquatic animals exports requiring inspection and biosecurity assistance
12	Number of alternative aquaculture-related contacts with producers, potential producers, and county faculty
13	Enhanced efficiency in hatchery management practices through the development of improved spawning protocols and hatchery management strategies
14	Number of catfish farmers using improved management practices
15	Number of completed long-term business plans

## **Outcome #1**

### **1. Outcome Measures**

Increased economic opportunity and profitability for SSDF

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

- 1890 Extension
- 1890 Research

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

Change in Condition Outcome Measure

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

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

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

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

In Arkansas, sweet potato production has been steadily growing with a 30% increase in 2014. Viral diseases cause significant damage to yield. In Beauregard, viruses account for 25 to 40 percent yield reduction. The chief viruses are the Sweet potato feathery mottle virus (SPFMV), Sweet potato virus G (SPVG), Ipomoea vein mosaic virus (IVMV); the crinivirus Sweet potato chlorotic stunt virus (SPCSV), and the begomovirus Sweet potato leaf curl virus (SPLCV). Virus-indexed sweet potato lines will help farmers maintain high yield and quality.

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

Shoot meristems were isolated and cultured on MS medium for sweet potato plant regeneration. The regenerated plants were screened for the presence or absence of viruses by PCR. Virus indexed sweet potato explants (Variety Beauregard) were developed and transferred to the greenhouse for multiplication.

#### **Results**

Virus-indexed slips were produced and contributed to the production of 30,000 slips that were planted in two acre plot. This led to production of about 400 bushels (50lbs.) of G1 sweet potato roots.

## **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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205 Plant Management Systems

## **Outcome #2**

### **1. Outcome Measures**

An increase in the number of SSDF that adopt one or more Best Management Practices for crop production

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

- 1890 Extension
- 1890 Research

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

Change in Action Outcome Measure

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

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

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

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

The Glyphosate Resistant Pigweed (GRP) is a troublesome weed in Eastern Arkansas. This weed affects both vegetables and row crops (soybeans, cottons, corn). Under ideal conditions, the weed can grow an inch a day and produce over a million seeds per plant. If not controlled early, the expensive hand hoe is control method often used or total crop losses occur. Since most SSDF do not attend educational meetings where control methods are discussed, they tend to have a large percentage of their fields infected with GRP with yields and income being reduced.

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

Extension Associates (EA) discussed GRP control methods with SSDF seeking loans during the preparation process and non-applicants before the cropping season begins. These producers were given fact sheets with different GRP Control methods. A article on GRP control methods that is mailed to approximately 400 SSDF was in the ?Farm Sense? Newsletter. The EAs also encouraged all producers to sign-up for a crop consultant through EQIP to develop a conservation activity plan (CAP)to receive financial incentives to manage GRP in conservation tillage systems.

#### **Results**

Approximately 20 SSDF signed up for the CAP plans under NRCS where a weed resistant management plan was developed for their operations. These producers are now eligible to receive cost share assistance on their resistant weed management plans. Also, about 30 SSDF took the GRP information that was discussed and implemented GRP Control Plans. We estimate that about 10,000 acres of SSDF soybeans were controlled from GRP as a result of the adoption

of GRP Control Plans. Willie Iverson, a participant, who implemented his plan, said that "I am controlling the Pigweeds this year?".

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
213	Weeds Affecting Plants

#### Outcome #3

##### 1. Outcome Measures

Increase the number of farmers that develop an estate plan to reduce land loss by Socially Disadvantaged Farmers

Not Reporting on this Outcome Measure

#### Outcome #4

##### 1. Outcome Measures

Enhanced crop diversity on SSDF to increase profitability

##### 2. Associated Institution Types

- 1890 Extension
- 1890 Research

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2014	0

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

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

Small and Socially Disadvantaged Farmers (SSDF), master gardeners, students, horticulture staff, and other volunteers could benefit from developing a cut flower business. Previous research results have shown that certain varieties/genotype(s) of gladiolus can be grown successfully in the area. Planting genotypes with superior market grades for cut flower should encourage SSDF

and gardeners to pursue a cut flower agribusiness that may be profitable in the Southeast Arkansas Delta.

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

Five selected genotypes of Gladiolus bulbs were studied for four years in the field and in vases. To evaluate vase life, flower spikes were placed in 5, 10, or 15 milligram solutions of sucrose, fructose or glucose for 10, 20, 40 or 60 minutes. Also, MgSO<sub>4</sub>, AgNO<sub>3</sub> and Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>, were used at 250, 500 or 750 ppm, plus sucrose at 1, 2 or 5 %. A second study was done with corms (2.6 ± 0.4 cm in diameter) being soaked for 6 hours in GA3 (75 and 100 ppm) or Ethrel (100 and 200 ppm) before planting at 30 and 40 corms/m<sup>2</sup> densities.

#### **Results**

The results suggest that AgNO<sub>3</sub> (500 ppm) + 2% sucrose is a good vase solution for preserving quality and longevity of gladiolus spikes.

Higher plant density increases the plant height, length of flower stalk and corm yield/unit area, while it decreases the number of florets/ spike and the length and diameter of flower, irrespective of the treatments including control. Treatment with ethrel inhibited plant growth but markedly increased the corm yield. The production of gladiolus spikes in southern Arkansas has potential to provide cash flow for SSDF through the cut flower business.

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

<b>KA Code</b>	<b>Knowledge Area</b>
205	Plant Management Systems

#### **Outcome #5**

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

Increase the number of SSDF that adopt one or more Best Management Practices for livestock production

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

- 1890 Extension
- 1890 Research

##### **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)

SSDF rely on small ruminant production to provide farm income, especially on marginal lands. They have kids and pregnant and lactating females that are susceptible to Haemonchus infection which frequently kills its host. These producers need more effective methods of controlling Haemonchus on their farms to reduce economic losses. Thus, they require training in basic livestock management skills to have a chance of being successful. Many of these farmers are new or beginning farmers that do not know how to properly manage livestock.

#### What has been done

Five gastrointestinal parasite management workshops were conducted to educate producers about the use of FAMACHA scoring, fecal egg counting and proper use of chemical dewormers to reduce the development of resistance, reduce the cost of medicine and reduce death losses to gastrointestinal parasites. Two beef cattle management workshops, 1 CES New Agent training, 1 NRCS training on grazing behavior, 8 small ruminant management workshops and 2 youth workshop/field days were held in several locations across Arkansas.

#### Results

Fifteen CES agents and 32 NRCS employees gained knowledge to help SSDF raise livestock successfully. Over 120 goat and sheep producers learned integrated parasite management methods. Twenty goat producers reduced the frequency of deworming saving an estimated \$460 each and slowing the rate of development of parasite resistance to anthelmintics. Sixty new producers learned the basic needs and management requirements of small ruminants and 300 youth and adults learned the important role that small ruminants play in Arkansas agriculture. Twenty five learned youth learned about parasite management for small ruminants.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
311	Animal Diseases

### Outcome #6

#### 1. Outcome Measures

Generation of new ideas/concepts for textile structures/end products from bio-fibers

#### 2. Associated Institution Types

- 1890 Extension
- 1890 Research

#### 3a. Outcome Type:

Change in Knowledge Outcome Measure

### 3b. Quantitative Outcome

Year	Actual
2014	0

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Climate change and environmental sustainability remain the major issues facing the fiber and textile industries. There is increased need for Human Sciences Programs in Merchandising, Textiles, & Design to assist with: 1) generating science based research to help demystify which textiles are eco-friendly and 2) disseminating this information to students, academics, industry professional, retailers, and consumers must occur in a timely manner to have an impact in a world where climate change has been accelerating ( U.N. Climate Change Study).

#### What has been done

A paper was presented that outlined the need to speed up research in this area. Nine new proprietary products were conceptualized. Educational materials have been developed and incorporated into two textile courses. A workshop sponsored by NIFA was attended and the information is used in a textile class this semester. The workshop helped researchers to conceptualize the needs of HBCU students and provided the basis for a USDA NIFA proposal. A case study on scaling up alpaca as an eco-friendly fiber in Arkansas has begun.

#### Results

The education received by attending the USDA NIFA Climate Change workshop is being used in class this semester. Students have an appreciation of how fiber, textiles, and textile products are affected by climate change. This understanding is the basis for a USDA NIFA proposal that is being prepared. Nine products were conceptualized ? one was selected for further development and possible entry into a competition. One paper was presented at an international conference. Textile performance testing is getting started including moisture management as related to comfort which is a factor in consumer satisfaction.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

**Outcome #7**

**1. Outcome Measures**

Number of presentations, abstracts, publications, newsletter articles and other forms of delivery of research-based information to baitfish farmers, directly and indirectly

**2. Associated Institution Types**

- 1890 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)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
307	Animal Management Systems

**Outcome #8**

**1. Outcome Measures**

Number of scientists that learned what we know

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2014	0

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

**Issue (Who cares and Why)**  
{No Data Entered}

**What has been done**  
{No Data Entered}

**Results**  
{No Data Entered}

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

**Outcome #9**

**1. Outcome Measures**

Number of producers who learn project results

**2. Associated Institution Types**

- 1890 Research

**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)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
302	Nutrient Utilization in Animals

**Outcome #10**

**1. Outcome Measures**

Financial impact of diagnostic services

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**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)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
307	Animal Management Systems
311	Animal Diseases

**Outcome #11**

**1. Outcome Measures**

Value of aquatic animals exports requiring inspection and biosecurity assistance

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**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)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
307	Animal Management Systems
311	Animal Diseases

**Outcome #12**

**1. Outcome Measures**

Number of alternative aquaculture-related contacts with producers, potential producers, and county faculty

**2. Associated Institution Types**

- 1890 Extension
- 1890 Research

**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)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

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<b>KA Code</b>	<b>Knowledge Area</b>
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302 Nutrient Utilization in Animals  
311 Animal Diseases

**Outcome #13**

**1. Outcome Measures**

Enhanced efficiency in hatchery management practices through the development of improved spawning protocols and hatchery management strategies

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2014	0

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

**Issue (Who cares and Why)**  
{No Data Entered}

**What has been done**  
{No Data Entered}

**Results**  
{No Data Entered}

**4. Associated Knowledge Areas**

**KA Code**    **Knowledge Area**  
307            Animal Management Systems

**Outcome #14**

**1. Outcome Measures**

Number of catfish farmers using improved management practices

**2. Associated Institution Types**

- 1890 Research

**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)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
307	Animal Management Systems

**Outcome #15**

**1. Outcome Measures**

Number of completed long-term business plans

**2. Associated Institution Types**

- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2014	0

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

**Issue (Who cares and Why)**  
{No Data Entered}

**What has been done**  
{No Data Entered}

**Results**  
{No Data Entered}

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

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

**Brief Explanation**

An unusually wet spring delayed the planting of row crops and vegetables in the area. Farmers who were able to get in the field early saw good yields while those that were late had reduced yields. Fortunately, the commodity prices were somewhat stable when compared to previous years.

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

**Evaluation Results**

1. Approximately 184 Small and Socially Disadvantaged Farmers (SDF) signed-up for USDA Programs including the operating and farm ownership loan programs.
2. About \$500,000 in EQIP funds, \$100,000 in CSP funds, \$150,000 from the Livestock Forage Program funds and \$100,000 in home improvement loans/grants were obtained by SSDF.
3. An estimated 10,000 acres of Glyphosate Resistant Pigweeds (GRP) were controlled on soybean farmed by SSDF this year as a result of adoption of GRP Control Plans.
4. Foundation seed (80-100 lbs.) were produced for two cowpea cultivars (UAPB-1 and UAPB-2) that can be used to increase the seed lot for subsequent use by SSDF.
5. Fifteen CES agents and 32 NRCS employees gained knowledge to help SSDF raise livestock successfully while 120 goat and sheep producers learned integrated parasite management methods.
6. Twenty goat producers reduced the frequency of deworming saving an estimated \$460 each and slowing the rate of development of parasite resistance to anthelmintics.
7. Students (25) and non-students (140) have been exposed to information on bio-based and sustainable fibers (alpaca, organic cotton, hemp, recycled polyester, and linen/flax).

### **Key Items of Evaluation**

The primary goal of this program is to help Small and Socially Disadvantaged Farmers (\$250,000 in gross sales or less) and their families to remain viable in an ever changing and competitive world. We do this by providing the necessary technical help to obtain the resources needed to produce crops, animals and fiber that can be used by an ever growing population.

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3. Twenty goat producers reduced the frequency of deworming saving an estimated \$460 each and slowing the rate of development of parasite resistance to anthelmintics.
4. The production of gladiolus spikes in southern Arkansas has potential to provide cash flow for SSDF through the cut flower business.