

# 2009 Mississippi State University Combined Research and Extension Annual Report of Accomplishments and Results

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## I. Report Overview

### 1. Executive Summary

This Plan of Work Report is a joint report from the Mississippi State University Extension Service (MSU-ES) and the Mississippi Agricultural and Forestry Experiment Station (MAFES) on 1862 extension and research efforts. The report is divided among 20 programs defined in the Five-Year Plan.

This report includes efforts and results related to a total Hatch appropriation of \$4,957,631 and a total Smith-Lever appropriation of \$6,676,428.

During FY 2009, MSU-ES professionals (267.2 total FTE) carried out 103,915 educational activities with a total of 3,963,173 contacts. In FY 2009 MAFES had 250 grants awarded for a total of over \$25 million.

#### Total Actual Amount of professional FTEs/SYs for this State

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	210.0	0.0	240.0	0.0
Actual	267.2	0.0	54.7	0.0

## II. Merit Review Process

### 1. The Merit Review Process that was Employed for this year

- Internal University Panel
- Combined External and Internal University External Non-University Panel
- Expert Peer Review

### 2. Brief Explanation

Research projects utilized both an internal university panel and an expert peer review as part of the regional research networks. These reviews covered all aspects of research project proposals, including scientific merit, budgets, and suitability of the research mission for the unit, experiment station, and regional consortium. In addition, commodity-specific advisory committees are used to make research as applicable as possible to the state's needs.

Extension programs underwent an internal university panel review. This review takes into consideration the need for the program (including stakeholder input), the methods utilized, the audience identified, and the methods for outcome/impact evaluation. Each of the programs also has an advisory panel (external non-university panel) which reviewed programs in terms of the need, resources allocated, and expected outcomes. These advisory panels are specific to the programs being delivered. Each advisory panel consisted of industry and/or community leaders in the area of review. The panel members are selected to be reflective of the community represented, and as such reflect the diversity of race, gender and socioeconomic status of the programs' clientele.

A specific example of how the process has worked is provided below.

The Department of Wildlife, Fisheries, and Aquaculture recently hosted five out-of-state Extension professionals to conduct an external review of the department's Extension programming. The team consisted

of team leader Scott Craven, University of Wisconsin; Gary San Julian, Pennsylvania State University; Billy Higginbotham, Texas A&M University; Greg Yarrow, Clemson University and David Drake, University of Wisconsin.

The team met with faculty, staff, and Extension administration on campus and produced a comprehensive seven page report outlining the department's strengths, weaknesses, and their recommendations regarding three primary subject areas:

- Programmatic issues
- Agency cooperation/coordination, and
- Institutional issues

### III. Stakeholder Input

#### 1. Actions taken to seek stakeholder input that encouraged their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals

#### Brief explanation.

Efforts to determine economic, social, and environmental issues began with County Extension Advisory Councils. Further needs assessment was carried out through Research and Extension Center Advisory Councils, and through formal and informal interaction with other stakeholders. Issues identified include concerns to be addressed with Extension and/or research programs.

##### County Extension Advisory Councils

As a formal process, key clientele met under the leadership of county Extension professionals to review results of programs and identify key issues to be addressed in the county or area. Input came from three different groups: the Overall Extension Advisory Council, Program Advisory Councils, and other stakeholders.

##### Overall Extension Advisory Councils

MSU-ES has an Overall Extension Advisory Council in each county. These advisory councils meet a minimum of two times per year to discuss programming efforts, evaluate programs, legitimize program efforts, assess needs for future programming, and identify human and financial resources needed for county programming. This group includes leaders who provide input from business, social, and economic entities as well as those who represent the needs of underserved and underrepresented clientele.

##### Program Advisory Councils

Program and/or commodity advisory groups in each county act as subcommittees of the overall advisory council, including people who represent the interests of agriculture, family & consumer sciences, 4-H youth, and community/rural development issues. These groups meet at least two times per year to identify specific areas of program needs, delivery and evaluation.

##### Other Stakeholders

MSU-ES county agents are also required to obtain information regarding clientele needs from people outside the advisory councils. They must give special attention to key community leaders and representatives of underserved populations, making sure all groups who are possible beneficiaries of MSU-ES programming efforts are included. These groups meet several times during the year to offer input and react to Extension's efforts to address key issues in the community.

##### Research and Extension Center Advisory Councils

MSU has four area Research and Extension Centers (Delta, Northeast, Central, and Coastal) jointly administered by MSU-ES and MAFES. These centers each have an overall advisory council where stakeholders led discussions about programming and research efforts and assessed needs. Various subgroups of the advisory

councils met several times during the year to discuss specific needs in research and extension programming.

#### Key Partners

MSU-ES and MAFES met with key partners throughout the year to discuss efforts and results, coordinate activities, and set priorities. These key partners include such organizations as the Mississippi Farm Bureau, Natural Resources

Conservation Service, Delta Council, Rural Development Offices, Mississippi Forestry Commission, Mississippi Department of Wildlife, Fisheries, and Parks, Mississippi Department of Agriculture and Commerce, Mississippi Consumer Education Partnership, and numerous state and regional commodity groups.

### **2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them**

#### **1. Method to identify individuals and groups**

- Use Advisory Committees
- Open Listening Sessions
- Needs Assessments

#### **Brief explanation.**

The collection of input from stakeholders is an ongoing process with both MSU-ES and MAFES. This was described in the previous section. Advisory committees are required to be reflective of the population of potential clientele. Listening sessions have been held for the general public through the area research and extension centers, including sessions specifically designed to reach under-served populations. The process began with county extension personnel identifying stakeholders, along with promotion of the meetings to the general public for their participation.

### **2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them**

#### **1. Methods for collecting Stakeholder Input**

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals

#### **Brief explanation.**

Meetings with traditional stakeholder groups, the general public, and specifically with non-traditional groups are an on-going part of the needs assessment process conducted by MSU-ES and MAFES. Surveys of traditional stakeholder groups and non-traditional groups and individuals were conducted in specific situations.

As an example, the Northeast Mississippi Research and Extension Center holds a yearly Producers Advisory Council meeting. This year, over 300 producers attended. The producers were grouped into 13 commodity committees, which made 48 recommendations for needed research and/or extension programming.

### **3. A statement of how the input will be considered**

- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Action Plans
- To Set Priorities

#### **Brief explanation.**

Stakeholder input had an influence on most aspects of this Plan of Work. Issues were identified through the needs assessment process discussed earlier. The issues helped extension agents and specialists determine their plans of action, including redirecting programs to meet clientele needs. Administration provided the resources to

accomplish these changes, including setting new priorities or revising existing priorities, and hiring appropriate staff members as required to address the priorities.

### Brief Explanation of what you learned from your Stakeholders

Key stakeholders for the family resource management program, from the National Center for Healthy Housing and the Alliance for Healthy Homes, recommended workshops for contractors and painting professionals to help them become certified under the new lead-safe work practices regulated by EPA. This led to a series of videoconferences to certify these professionals. (See program descriptions for more details.)

Sweet potato producers recommended research projects on tip rot and nematode control. These areas will be considered during the current budget cycle.

Forest landowners requested more management education. The Forestry Extension Specialists have developed a new forest management publication and initiated new workshops around the state that have been well attended. (See program descriptions for more details.)

### IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
6676428	0	4331182	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
<b>Actual Formula</b>	6676428	0	4957631	0
<b>Actual Matching</b>	6676428	0	5037334	0
<b>Actual All Other</b>	0	0	20176401	0
<b>Total Actual Expended</b>	13352856	0	30171366	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from				
Carryover				
	0	0	0	0

## V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	4-H Youth Development
2	Agronomic Crops
3	Animal Production
4	Animal Protection
5	Aquaculture Health
6	Aquaculture Production
7	Early Care and Education
8	Enterprise and Community Development
9	Nutrient Management/Water Quality
10	Family Life
11	Family Resource Management
12	Forestry
13	Human Health
14	Horticulture
15	Integrated Pest Management
16	Family Leadership Development
17	Human Nutrition
18	Poultry
19	Agribusiness/Risk Farm Management
20	Wildlife and Fisheries
21	Childhood Obesity
22	Food Safety
23	Global Food Security and Hunger
24	Climate Change
25	Sustainable Energy

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

**Program # 1**

**1. Name of the Planned Program**

4-H Youth Development

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

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%		0%	
	<b>Total</b>	100%		0%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	62.5	0.0	0.0	0.0
Actual	90.3	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
2255151	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
2255151	0	0	0
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**

Activities

- Recruit Youth and Volunteers
- Volunteer Leader Training for Youth Leaders and Adult Volunteers
- Provide training on organization and maintenance of community clubs
- Provide recognition events for youth to exhibit project skills
- Chartering all 4-H Clubs and groups
- Four Essential Elements
- 4-H Club Congress
- District Achievement Days
- County, State, & Regional Fairs
- Livestock and Horse Shows
- Provide training to Extension personnel on experiential education through subject-matter work.
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- Legal Use of the Name and Emblem
- Diversity TrainingFinancial Management
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**2. Brief description of the target audience**

All Mississippians between the ages of 6 and 18.

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

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	156375	68805	281474	118845
<b>Actual</b>	132351	124338	308819	290121

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	2	0	
<b>Actual</b>	10	0	0

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

**Output Target**

**Output #1**

**Output Measure**

- Number of youth enrolled in 4-H Clubs.

Year	Target	Actual
2009	16000	21300

**Output #2****Output Measure**

- Number of clubs operating on military bases.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	3	3

**Output #3****Output Measure**

- Number of youth-at-risk who join 4-H clubs.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	500	710

**Output #4****Output Measure**

- Number of volunteers attending local and/or district training.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	500	740

**Output #5****Output Measure**

- Number of volunteers attending state volunteer leaders conference.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	200	241

**Output #6****Output Measure**

- Number of volunteers attending the regional 4-H volunteer leaders forum.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	50	45

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Adult and youth volunteers increasing their knowledge and skills in being effective volunteer leaders.
2	Volunteers participating in training conferences incorporate their skills gained from training to work with 4-H clubs.
3	Volunteer-managed 4-H clubs are sustained at the local level.
4	Number of youth who improve life skills.
5	Number of youth who increase knowledge of subject-matter areas.
6	Number of 4-H projects completed.
7	Youth increase their involvement in leadership events and activities at the district, state, and national levels.

**Outcome #1**

**1. Outcome Measures**

Adult and youth volunteers increasing their knowledge and skills in being effective volunteer leaders.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	300	422

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
806	Youth Development

**Outcome #2**

**1. Outcome Measures**

Volunteers participating in training conferences incorporate their skills gained from training to work with 4-H clubs.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	200	241

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

**Outcome #3**

**1. Outcome Measures**

Volunteer-managed 4-H clubs are sustained at the local level.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2009	200	933

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

**Outcome #4**

**1. Outcome Measures**

Number of youth who improve life skills.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	14500	17157

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

**Issue (Who cares and Why)**

Of the 857,305 minors below the age 19 in over half are faced with issues that could hamper their success in the future (United States Census Bureau, 2008). These youth are dealing with matters such as poverty, violence, pregnancy, drugs and alcohol. These issues are becoming a significant problem in both rural and urban areas (Vowell and Wells, 1996). These risk behaviors lead to bad decision making that lead to poor mental and physical health and poor economic stability (Annie. E. Casey Foundation, 2008). These factors make it difficult for a young person to become a successful adult.

**What has been done**

The development of life skills through experiential learning is the cornerstone of 4-H. The number of the nation's youth exhibiting at-risk behavior points to a lack of necessary skills such as working with others, understanding self, communicating, making decisions, and leadership. These are life skills that are required by adults to be successful in everyday living (Boyd, Herring, & Briers, 1992).

**Results**

In a study of Mississippi Senior 4-H shooting sports participants, using scores on the Youth Leadership Life Skills Development Scale as the outcome indicator, participants had an overall mean of 2.19 on the 0 to 3 scale. This indicates that 4-H members credited their participation in 4-H as responsible for between a "moderate gain" and "a lot of gain" in the 30 skills measured by the scale.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
806	Youth Development

**Outcome #5**

**1. Outcome Measures**

Number of youth who increase knowledge of subject-matter areas.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	14500	17157

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

It has been said that youth livestock programs teach youth how to feed, fit, and show their animals and to provide an opportunity for personal growth and development of the young person (Hammatt, 1995). Youth livestock programs also provide an opportunity for youth to develop character aspects such as responsibility, respect, trustworthiness, fairness, caring, and citizenship (Josephson, 2002).

**What has been done**

In the 4-H Livestock Quality Assurance Education Evaluation for Mississippi Youth, an illustrated lecture was prerecorded and distributed to all county Extension offices and FFA chapters. The training covered livestock quality assurance practices. A pretest was administered before watching the tape and going through the interactive components of the training. Participants took a posttest following all instruction. Resources for program development came from the Arkansas Beef Quality Assurance Program and the National Pork Board's Youth PQA Plus Training Manual. From these sources, 10 good production practices were identified that would be beneficial to Mississippi youth livestock producers. A quiz was developed to assess the comprehension of the material presented to participants. All junior participants were required to participate in taking the quiz, whereas adults were encouraged to do so.

**Results**

Findings showed that each group (Jr., Sr., Adult) had significant increases in scores from pretest to post test, further analysis revealed all three groups showed statistically significant increases in the score from the pretest. The partial Eta Squared (0.009) indicated that there was no relationship between groups. The pairwise comparisons table shows that Jr.'s and Sr.'s scored significantly lower than the Adults, while the Jr.'s and Sr.'s group was not significantly different from each other on the post test scores.

Youth and adult participants who have completed the Mississippi Livestock Quality Assurance Program should have a better understanding of food safety awareness and the importance of raising livestock in an appropriate manner.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
806	Youth Development

**Outcome #6****1. Outcome Measures**

Number of 4-H projects completed.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	8000	8578

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
806	Youth Development

**Outcome #7**

**1. Outcome Measures**

Youth increase their involvement in leadership events and activities at the district, state, and national levels.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	4000	4289

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
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**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Populations changes (immigration, new cultural groupings, etc.)

**Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study
- Comparisons between program participants (individuals, group, organizations) and non-participants

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 2****1. Name of the Planned Program**

Agronomic Crops

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
102	Soil, Plant, Water, Nutrient Relationships	10%		5%	
111	Conservation and Efficient Use of Water	15%		5%	
132	Weather and Climate	5%		5%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		5%	
202	Plant Genetic Resources	5%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	10%		10%	
204	Plant Product Quality and Utility (Preharvest)	0%		10%	
205	Plant Management Systems	30%		30%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		10%	
212	Pathogens and Nematodes Affecting Plants	5%		5%	
213	Weeds Affecting Plants	10%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	18.0	0.0	104.0	0.0
Actual	17.8	0.0	23.0	0.0

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

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
445329	0	2792553	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
445329	0	1726620	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	8535727	0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Short courses, Workshops or Training Seminars  
 Field Consultations  
 Demonstration and Verification Programs  
 Newsletters and Publications  
 Web-based information and E-mail  
 Distance Learning Programs  
 Field Manuals or Guides  
 Farm Management Software/Components

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

The target audience for this program includes approximately 30,000 Mississippi crop producers, consultants, retail dealers and industry personnel.

**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	50000	180000	0	0
<b>Actual</b>	78119	241658	0	0

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

Year: 2009

Plan: 0

Actual: 1

**Patents listed**

System for automated variable rate aerial application of dry or granular materials

**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	8	50	
<b>Actual</b>	10	67	77

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

- Number of producers attending seminars, workshops, short courses, and demonstrations.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	25762	53296

**Output #2**

**Output Measure**

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of producers adopting new technologies, strategies, or systems.
2	Number of producers increasing production levels.
3	Number of producers decreasing production inputs/expenses.
4	Number of producers improving their environmental stewardship.

**Outcome #1**

**1. Outcome Measures**

Number of producers adopting new technologies, strategies, or systems.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	5000	10659

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
132	Weather and Climate
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants

**Outcome #2**

**1. Outcome Measures**

Number of producers increasing production levels.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	4000	8527

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
205	Plant Management Systems

**Outcome #3**

**1. Outcome Measures**

Number of producers decreasing production inputs/expenses.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	4000	8527

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants

**Outcome #4**

**1. Outcome Measures**

Number of producers improving their environmental stewardship.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2009	2000	4264

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water

132	Weather and Climate
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants

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

##### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges

##### **Brief Explanation**

#### **V(I). Planned Program (Evaluation Studies and Data Collection)**

##### **1. Evaluation Studies Planned**

- Retrospective (post program)
- Case Study

##### **Evaluation Results**

Over 99% of cotton and soybean producers and over 90% of corn producers are using genetically enhanced (glyphosate-resistant) varieties. This has decreased the use of herbicides substantially-- farmers have gone from making two to three trips across a field to usually one trip for weed control. There is some concern about glyphosate resistant weed populations resulting from the use of this technology.

Additionally, over 90% of cotton producers are using bT technology for insect control. This has reduced insect sprayings from 12 to 16 times per year to 0 to 2 times per year. This technology has had the double benefit of saving money on fuel, equipment, labor, etc. and virtually eliminating the impact on the environment from insecticide runoff.

##### **Key Items of Evaluation**

Environmental impact (due to pesticide runoff) of cotton, corn, and soybean production has been greatly reduced by use of genetically-modified crops.

**V(A). Planned Program (Summary)****Program # 3****1. Name of the Planned Program**

Animal Production

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

## 1. Program Knowledge Areas and Percentage

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
301	Reproductive Performance of Animals	15%		25%	
302	Nutrient Utilization in Animals	20%		10%	
303	Genetic Improvement of Animals	20%		10%	
304	Animal Genome	5%		10%	
305	Animal Physiological Processes	10%		5%	
306	Environmental Stress in Animals	10%		20%	
307	Animal Management Systems	15%		15%	
308	Improved Animal Products (Before Harvest)	5%		5%	
	<b>Total</b>	100%		100%	

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

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

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	14.0	0.0	20.0	0.0
Actual	18.1	0.0	5.4	0.0

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

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
452848	0	828669	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
452848	0	520967	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	1271031	0

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

## 1. Brief description of the Activity

Research and Extension programs will be conducted in the following areas (and others as needed):

- Forage Testing

- Ration Recommendations
- Beef Quality Assurance
- Farm-to-Feedlot Project
- Stocker Grazing Program
- Forage Variety Evaluation Publications
- Annual Mississippi Dairy Enterprise Planning Budgets for various sizes of typical dairy operations in the state
- Workshops for dairy producers of the use and value of dairy budgets in the management of their dairy farms
- Enrollment on the Dairy Herd Improvement Assn.
- Heat Abatement Training
- DHIA herd management screening
- Statewide Dairy Field Day
- Dairy Nutrition Workshops
- Reproductive Management
- BCIA sponsored sales
- Swine Producers Extension Program
- Swine Managers Training
- Environmental Continuing Education Classes
- Dietary analyses and consultation
- Pork Quality Assurance Program
- Swine Welfare and Assurance Program

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

The target audience for this program includes beef, dairy, swine, and equine producers (full- and part-time) and related industry personnel.

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

**1. Standard output measures**

<b>2009</b>	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Plan</b>	29000	100000	0	0
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

<b>2009</b>	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>	16	2	
<b>Actual</b>	9	20	29

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

## **Output Target**

### **Output #1**

#### **Output Measure**

- Number of producers attending seminars, workshops, short courses, and demonstrations.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	12843	34166

### **Output #2**

#### **Output Measure**

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

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

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

O. No.	OUTCOME NAME
1	Number of producers adopting new technologies, strategies, or systems.
2	Number of producers increasing production levels.
3	Number of producers decreasing production inputs/expenses.
4	Number of producers improving their environmental stewardship.

**Outcome #1**

**1. Outcome Measures**

Number of producers adopting new technologies, strategies, or systems.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	2500	6833

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
304	Animal Genome
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

**Outcome #2**

**1. Outcome Measures**

Number of producers increasing production levels.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	2000	5467

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems

**Outcome #3**

**1. Outcome Measures**

Number of producers decreasing production inputs/expenses.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	2000	5467

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

**Outcome #4**

**1. Outcome Measures**

Number of producers improving their environmental stewardship.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2009	1000	2733

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

**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

**Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study

**Evaluation Results**

**Key Items of Evaluation**

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

**Program # 4**

**1. Name of the Planned Program**

Animal Protection

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

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
306	Environmental Stress in Animals	0%		15%	
311	Animal Diseases	40%		25%	
312	External Parasites and Pests of Animals	10%		20%	
313	Internal Parasites in Animals	10%		15%	
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	10%		20%	
315	Animal Welfare/Well-Being and Protection	30%		5%	
	<b>Total</b>	100%		100%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.5	0.0	1.0	0.0
Actual	0.6	0.0	1.0	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
15975	0	79118	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
15975	0	105202	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	137725	0

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

1. Brief description of the Activity

Research and Extension programs will be conducted in the following areas (and others as needed):

- Forage Testing
- Ration Recommendations

- Beef Quality Assurance
- Farm-to-Feedlot Project
- Stocker Grazing Program
- Forage Variety Evaluation Publications
- Annual Mississippi Dairy Enterprise Planning Budgets for various sizes of typical dairy operations in the state
- Workshops for dairy producers of the use and value of dairy budgets in the management of their dairy farms
- Enrollment on the Dairy Herd Improvement Assn.
- Heat Abatement Training
- DHIA herd management screening
- Statewide Dairy Field Day
- Dairy Nutrition Workshops
- Reproductive Management
- BCIA sponsored sales
- Swine Producers Extension Program
- Swine Managers Training
- Environmental Continuing Education Classes
- Dietary analyses and consultation
- Pork Quality Assurance Program
- Swine Welfare and Assurance Program

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

The target audience for this program includes beef, dairy, swine, and equine producers (full- and part-time) and related industry personnel.

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

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	1500	3500	0	0
<b>Actual</b>	2138	4799	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 1

**Patents listed**

Single nucleotide polymorphism markers for determining mammalian male fertility

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	1	1	
<b>Actual</b>	1	7	0

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

## Output Target

### Output #1

#### Output Measure

- Number of producers attending seminars, workshops, short courses, and demonstrations.

Year	Target	Actual
2009	800	1156

### Output #2

#### Output Measure

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

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

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

O. No.	OUTCOME NAME
1	Number of producers adopting new technologies, strategies, or systems.
2	Number of producers improving overall heard health and/or protection.

**Outcome #1**

**1. Outcome Measures**

Number of producers adopting new technologies, strategies, or systems.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	150	231

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
311	Animal Diseases
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
315	Animal Welfare/Well-Being and Protection

**Outcome #2**

**1. Outcome Measures**

Number of producers improving overall heard health and/or protection.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	100	185

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
311	Animal Diseases
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
315	Animal Welfare/Well-Being and Protection

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

**External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations

**Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study

**Evaluation Results**

**Key Items of Evaluation**



**V(A). Planned Program (Summary)****Program # 5****1. Name of the Planned Program**

Aquaculture Health

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

## 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
311	Animal Diseases	35%		85%	
312	External Parasites and Pests of Animals	15%		0%	
313	Internal Parasites in Animals	15%		10%	
315	Animal Welfare/Well-Being and Protection	35%		5%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.4	0.0	0.7	0.0
Actual	0.6	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
15171	0	584	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
15171	0	876	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	351064	0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Develop diagnostic tools to detect and monitor diseases in commercially raised channel catfish and determine virulence factors associated with those diseases.

Develop fish health management procedures to control economically important diseases of channel catfish.

Determine factors associated with emerging diseases in pond-raised channel catfish.

Use epidemiological methods to investigate new and emerging diseases, and to identify environmental and management

factors that influence the onset and severity of disease outbreaks.

Researchers will develop referred journal articles and give scientific presentations at professional societies and at producer meetings.

Extension specialists will conduct workshops and seminar programs. Extension publications and newsletters will aid in transferring new knowledge to producers. Farm visits will help producers adapt new procedures on farms.

## 2. Brief description of the target audience

The target audience for this program is producers of catfish, crayfish, and freshwater prawns and related industry personnel.

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

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	211	883	0	0
<b>Actual</b>	112	1938	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

#### Patents listed

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

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	1	0	
<b>Actual</b>	0	0	0

### V(F). State Defined Outputs

#### Output Target

#### Output #1

##### Output Measure

- Number of producers attending seminars, workshops, short courses, and demonstrations.

Year	Target	Actual
2009	200	342

**Output #2**

**Output Measure**

- Numbers of articles/abstracts in journals, proceedings and edited books.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of producers adopting new technologies, strategies, or systems.
2	Number of producers improving fish health management production efficiency.

**Outcome #1**

**1. Outcome Measures**

Number of producers adopting new technologies, strategies, or systems.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	40	68

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
311	Animal Diseases
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals
315	Animal Welfare/Well-Being and Protection

**Outcome #2**

**1. Outcome Measures**

Number of producers improving fish health management production efficiency.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2009	30	55

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
311	Animal Diseases
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals
315	Animal Welfare/Well-Being and Protection

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

**External factors which affected outcomes**

- Government Regulations
- Competing Programmatic Challenges

**Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

- Retrospective (post program)
- Case Study

**Evaluation Results**

**Key Items of Evaluation**

**V(A). Planned Program (Summary)****Program # 6****1. Name of the Planned Program**

Aquaculture Production

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
302	Nutrient Utilization in Animals	50%		15%	
306	Environmental Stress in Animals	15%		0%	
307	Animal Management Systems	10%		75%	
308	Improved Animal Products (Before Harvest)	25%		5%	
402	Engineering Systems and Equipment	0%		5%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	2.0	0.7	15.0	0.0
Actual	2.0	0.0	6.1	0.0

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

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
49657	0	19197	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
49657	0	659529	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	3336455	0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Develop feeds and feeding practices for optimal nutrition, increased production, and improved water quality of pond-raised catfish.

Increase the reliability, efficiency, and cost-effectiveness of catfish fry production through the use of new and improved technologies.

Apply engineering approaches to design new or modified harvesting equipment.

Increase reliability, efficiency, and cost-effectiveness of catfish production through the use of new and improved culture system technologies.

Researchers will develop referred journal articles and give scientific presentations at professional societies and at producer meetings.

Extension specialists will conduct workshops and seminar programs. Extension publications and newsletters will aid in transferring new knowledge to producers. Farm visits will help producers adapt new procedures on farms.

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

The target audience for this program includes producers of catfish, crayfish, and freshwater prawns, and related industry personnel.

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

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	1500	3500	0	0
<b>Actual</b>	3213	799	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	2	8	
<b>Actual</b>	0	8	8

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

**Output Target**

**Output #1**

**Output Measure**

- Number of producers attending seminars, workshops, short courses, and demonstrations.

Year	Target	Actual
2009	453	669

**Output #2**

**Output Measure**

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of producers adopting new technologies, strategies, or systems.
2	Number of producers improving production efficiency.
3	Number of producers improving their environmental stewardship.

**Outcome #1**

**1. Outcome Measures**

Number of producers adopting new technologies, strategies, or systems.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	100	134

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

**Outcome #2**

**1. Outcome Measures**

Number of producers improving production efficiency.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	80	107

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

**Outcome #3**

**1. Outcome Measures**

Number of producers improving their environmental stewardship.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	40	53

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
307	Animal Management Systems

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

#### **External factors which affected outcomes**

- Economy
- Public Policy changes

#### **Brief Explanation**

Prices for farm-raised catfish have decreased because of foreign competition. The number of catfish producers in Mississippi has declined as a result.

### **V(I). Planned Program (Evaluation Studies and Data Collection)**

#### **1. Evaluation Studies Planned**

- Retrospective (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Case Study

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

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

**Program # 7**

**1. Name of the Planned Program**

Early Care and Education

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

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	80%		80%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	20%		20%	
<b>Total</b>		100%		100%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	11.0	0.0	0.0	0.0
Actual	12.8	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
321030	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
321030	0	0	0
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**

Train FCS Area Agents & early childhood staff (Educators) in content & teaching techniques as it relates to children ages 0-5 & 6-12.

Train Child and Family Development (CFD) Area Agents and project staff in parent education as related to readiness issues. CFD Area Agents & project staff collaborate with local organizations, agencies, and businesses.

CFD Area Agents & project staff serve as a community resource in childcare issues.

CFD Area Agents & project staff produce & distribute newsletters, news articles, publications, and training calendar.

CFD Area Agents & project staff design, facilitate & conduct direct trainings, & distance trainings.

CFD Area Agents & project staff, develop, & implement evaluation strategies.

CFD Area Agents & project staff market program (including distance ed.) among agencies & in local media, produce flyers.

CFD Area Agents & project staff provides mandated staff development training to keep providers in good standing with legal requirements.

CFD Area Agents & project staff provide technical assistance to providers & businesses.

CFD Area Agents and project staff will receive/ maintain ECERS; ITERS; and FDCRS Certification.

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

In general, audience for this program is families and communities. Specifically, the following groups are target audiences:

Early Care & Education Providers, including Directors, Center-based professionals, Family Childcare providers, and School-age providers.

- Industry/Business owners
- Parents
- Grandparents
- Agencies
- Professional Organizations
- Elementary teachers
- Elected officials

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

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	18400	72000	0	0
<b>Actual</b>	34755	34863	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	1	0	
<b>Actual</b>	3	0	3

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

**Output Target**

**Output #1**

**Output Measure**

- Number of clientele attending seminars, workshops, and short courses.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	17252	11603

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of clientele increasing knowledge in child care and development content areas.
2	Number of care providers maintaining certification requirements.
3	Number of care providers increasing the quality of care provided.

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

Number of clientele increasing knowledge in child care and development content areas.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	3400	2321

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Current government regulations permit the educational levels of non-Head Start early care and education providers to be minimal, creating a disparity in the quality of care provided to infants, toddlers, and pre-school age children. In order to improve the quality of care for Mississippi's most vulnerable population, it is critically important to maintain a rigorous training system with numerous opportunities for face-to-face training, distance training, and personal technical assistance. This ensures the two-fold gain of increased school readiness for young children and improved capacity of the early childhood workforce.

**What has been done**

Over the past six years, Mississippi State University developed its community college partnerships and relationships with other organizations to increase the number of Mississippi Child Care Resource & Referral sites from the original three to twelve. The sites provide a wide array of materials, supplies, equipment, and services to parents, early care and education providers, students, child development centers, and community members at little or no charge. By working with local school districts, we've developed a site at the Pearl Parent and Teacher Community Resource Center in addition to our site at the Center for Families and Children in Petal. The Mid-Jackson Family Resource Center was agreed upon in 2009 and will open in 2010.

In 2009, eleven training coordinators and seven MSU-ES Child and Family Development Area Agents work with the MSCCR&R Network provided training workshops across the state.

In addition to traditional trainings, our organization supported nine mini-conferences and the annual Mississippi Early Childhood Association (MSECA) conference with trainings, displays, materials, and outreach.

**Results**

Twelve "bricks and mortar" sites and one Mobile Resource & Referral serve all 82 counties in Mississippi. In the 2009 calendar year the MSCCR&R Network presented 574 training workshops, a 31.1% increase over 2008. These workshops were attended by 18,223 participants, a 36.6% increase over 2008. As word of our services spread, our site visits increased 142%, from 1,583 in 2008 to 3,833 visits in 2009. 6,977 educational items were checked out from the Resource & Referral offices (+47.3%). 902 hours of technical assistance were provided to 39 child care centers. 55 child care referrals were made. Expanding the training and educational opportunities for early care and education providers will increase the quality of current child care programs throughout the state,

supporting the Quality Rating System established by the Mississippi Department of Human Services. Additional benefits are improved school readiness and workforce development.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

**Outcome #2**

**1. Outcome Measures**

Number of care providers maintaining certification requirements.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	2720	1856

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

**Outcome #3**

**1. Outcome Measures**

Number of care providers increasing the quality of care provided.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

### 3a. Outcome Type:

Change in Condition Outcome Measure

### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1360	928

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

The relationship between caregiver and child is a key indicator of the quality of care. The social, emotional, cognitive, and physical development of children is dependent on the quality of interactions with caregivers and the environment established by child caregivers. Children who receive supportive, stimulating care are more likely to show normal development at two, six, and ten years old. With an estimated fifty-seven percent (57%) of Mississippi's children in unlicensed settings, it is vital to provide additional educational information and programs to those in-home care providers.

#### What has been done

The Nurturing Homes Initiative (NHI) project provides educational information, training and technical assistance to in-home care providers who offer full-day, full-year childcare services to children. Since 2001, the Nurturing Homes Initiative, a collaborative effort between the Mississippi State University Extension Service, the Mississippi Department of Human Services, and the Office for Children and Youth, has provided educational programming and technical assistance to in-home early care and education providers. The program uses a nationally normed assessment tool, the Family Day Care Rating Scale (FDCRS), to assess the quality of childcare provided by the in-home providers. Through a unique system of support, NHI training coordinators utilize printed educational materials, one-on-one technical assistance, and interaction with the children to provide training that is time efficient, economically feasible for the early care and education providers, and tailored to each provider's specific needs. In 2009, the NHI team focused on the Mississippi Early Learning Guidelines for three and four year old children, in addition to basic curricular topics such as health and safety (i.e. hand-washing) and reading aloud.

#### Results

During 2009 the Nurturing Homes Initiative was conducted in 45 counties with 100 in-home child care providers. 6 Field Staff Technical Assistants conducted personalized technical assistance.

Of the 100 providers on whom posttest data were collected, all improved. All of the participating providers improved at least one rating point or to the score of 4.0-4.5 on the Family Day Care Rating Scale. Results of the Arnett Caregiver Interaction Scale show that one hundred percent (100%) of the participating providers demonstrated positive and appropriate interactions with their children.

## 4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

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

#### **External factors which affected outcomes**

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

#### **Brief Explanation**

Fewer positions that target this area led to a decrease in programming this year. This has been addressed in the 2011 to 2015 plan.

### **V(I). Planned Program (Evaluation Studies and Data Collection)**

#### 1. Evaluation Studies Planned

- Before-After (before and after program)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

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

**Program # 8**

**1. Name of the Planned Program**

Enterprise and Community Development

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

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	25%		10%	
609	Economic Theory and Methods	25%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	25%		35%	
805	Community Institutions, Health, and Social Services	25%		30%	
903	Communication, Education, and Information Delivery	0%		25%	
<b>Total</b>		100%		100%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.0	1.5	0.0
Actual	15.5	0.0	0.5	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
386555	0	50113	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
386555	0	13108	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	498618	0

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

**1. Brief description of the Activity**

Extension will assist local communities in conducting the following activities:

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- o

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o Development of demographic, economic, and fiscal profiles  
 Development of economic analyses (eg., feasibility, impact, export-base, business plans, commuting, trade, shift share, location quotients).  
 Providing technical assistance  
 Holding community forums  
 Taking strategic planning surveys (eg., market assessment, customer satisfaction, hospitality, health).  
 Developing market strategies  
 Conducting strategic planning workshops  
 Publishing a directory of local services  
 Developing quantitative profiles of health organizations  
 Conducting feasibility studies  
 Producing gap analyses  
 Promoting coalition building trainings  
 Conducting tourism development workshops  
 Providing customer service/hospitality trainings  
 Conducting leadership development workshops  
 Provide technical assistance to counties and municipalities in such areas as general management, financial administration, personnel administration, leadership development, economic development, community facilities and services, and solid waste management.

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

The target audience for this program consists of local communities and their leaders.

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

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	109473	27368	0	0
<b>Actual</b>	132351	124338	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	2	

<b>Actual</b>	4	1	5
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**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of clientele attending workshops, seminars, and short courses.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	18246	51470

**Output #2**

**Output Measure**

- Number of communities requesting economic analyses.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	30	35

**Output #3**

**Output Measure**

- Number of communities participating in community health improvement activities.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	30	35

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of community leaders improving knowledge and skills.
2	Number of participants implementing strategies to improve public decision-making and/or increase civic engagement.
3	Number of local government officials obtaining required certifications.
4	Number of local communities adopting recommended strategies to improve their local economy.
5	Number of local communities adopting recommended strategies to improve health services.
6	Number of communities implementing strategies for improvement, development, and/or marketing of tourist attractions.
7	Number of local communities improving their health services.
8	Number of communities reporting increased levels of tourist activity.

**Outcome #1**

**1. Outcome Measures**

Number of community leaders improving knowledge and skills.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	8200	17157

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
608	Community Resource Planning and Development
609	Economic Theory and Methods
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services
903	Communication, Education, and Information Delivery

**Outcome #2**

**1. Outcome Measures**

Number of participants implementing strategies to improve public decision-making and/or increase civic engagement.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	3550	8578

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
608	Community Resource Planning and Development
609	Economic Theory and Methods
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services
903	Communication, Education, and Information Delivery

**Outcome #3**

**1. Outcome Measures**

Number of local government officials obtaining required certifications.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	4800	8578

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
805	Community Institutions, Health, and Social Services

**Outcome #4**

**1. Outcome Measures**

Number of local communities adopting recommended strategies to improve their local economy.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2009	20	36

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
609	Economic Theory and Methods

**Outcome #5**

**1. Outcome Measures**

Number of local communities adopting recommended strategies to improve health services.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	20	20

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

**Issue (Who cares and Why)**

Fifty-two percent of older Mississippians live in rural areas, and over 80% live in their own family dwellings. Since 1970, the state's 60 and older population has grown by 40%. The challenge for Mississippi is finding ways to maintain and improve the health of our senior citizens while allowing them the freedom of residing in their own homes. This is especially true for rural areas with less formal support for seniors' health and well being.

**What has been done**

In response to this need Mississippi State University Extension Service designed the Smart Aging: Healthy Futures program to help communities foster the healthy aging of their senior populations. The project was conducted in Oktibbeha, Clay, Copiah and Lincoln Counties and, in part, in the City of Pascagoula. Over 350 people attended the forums and approximately 80 individuals participated in the action group training.

Another element of the program recruited seniors and others to be trained as lay health educators delivering health messages of particular significance to senior audiences. Fifty-seven individuals were trained as Healthy Futures Volunteers. Over 925 Mississippians were reached by these volunteers and have heard health presentations on such topics as osteoporosis, self-care, heart attack and stroke warning signs and symptoms, Alzheimer's disease, vision care, oral health, and prostate, breast and colorectal cancer.

**Results**

Senior centers have been developed and opened in Crystal Springs and Starkville as a result of the efforts of two of the action groups. Brookhaven was already working on a community block grant application for a center and the Smart Aging community action group served as an advisory group to that effort. Clay County secured a location to begin a center, but is struggling with how to move forward.

Recognizing that medical and clerical personnel are frequently first responders to the needs of seniors, another action group developed a booklet on concerns of older adults for use by professionals. The booklet includes descriptive information on services available and contact information on such topics as home delivered and congregate meals, respite care, support groups, victimization, assisted living, social opportunities, etc.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services

## **Outcome #6**

### **1. Outcome Measures**

Number of communities implementing strategies for improvement, development, and/or marketing of tourist attractions.

Not Reporting on this Outcome Measure

## **Outcome #7**

### **1. Outcome Measures**

Number of local communities improving their health services.

Not Reporting on this Outcome Measure

## **Outcome #8**

### **1. Outcome Measures**

Number of communities reporting increased levels of tourist activity.

Not Reporting on this Outcome Measure

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

### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations

### **Brief Explanation**

## **V(I). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Retrospective (post program)
- Case Study

### **Evaluation Results**

{No Data Entered}

### **Key Items of Evaluation**

{No Data Entered}

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

**Program # 9**

**1. Name of the Planned Program**

Nutrient Management/Water Quality

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

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	20%		10%	
111	Conservation and Efficient Use of Water	15%		10%	
112	Watershed Protection and Management	0%		15%	
133	Pollution Prevention and Mitigation	0%		10%	
401	Structures, Facilities, and General Purpose Farm Supplies	10%		15%	
402	Engineering Systems and Equipment	15%		15%	
403	Waste Disposal, Recycling, and Reuse	15%		15%	
404	Instrumentation and Control Systems	10%		5%	
405	Drainage and Irrigation Systems and Facilities	15%		5%	
<b>Total</b>		100%		100%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	2.0	0.0	10.0	0.0
Actual	1.6	0.0	1.9	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
39099	0	212967	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
39099	0	26223	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	580159	0

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

1. Brief description of the Activity

Varied activities, services and products are anticipated as a result of this plan. These include formation of state and regional advisory groups, assignment of work groups to address specific issues and tasks associated with nutrient management and water quality, participation of targeted audiences such as agricultural producers in environmental education programs, development of publications, fact sheets, web pages and other educational materials as program support, and reporting documents. Specific programs targeted toward agricultural producers in this plan include environmental stewardship programs, waste pesticide collection and disposal programs, recycling and solid waste management programs, and other initiatives related to water quality and nutrient management.

## 2. Brief description of the target audience

Stakeholders and customers of research and Extension programs represent a broad section of audiences, including agricultural producers and other rural audiences, agricultural support groups, environmental and water quality agencies, consumers, and traditionally under-served groups.

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

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	2500	1650	0	0
Actual	6282	3949	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

##### Patents listed

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

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	4	2	
Actual	0	5	5

### V(F). State Defined Outputs

#### Output Target

##### Output #1

##### Output Measure

- Number of producers attending seminars, workshops, short courses, and demonstrations.

Year	Target	Actual
2009	700	1705

**Output #2**

**Output Measure**

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

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

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

O. No.	OUTCOME NAME
1	Number of producers adopting new technologies, strategies, or systems.
2	Number of producers improving their environmental stewardship.

**Outcome #1**

**1. Outcome Measures**

Number of producers adopting new technologies, strategies, or systems.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	125	341

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

**Issue (Who cares and Why)**

In agricultural research, ABE faculty members worked with Mississippi Delta rice farmers to reduce water and energy usage in rice irrigation.

**What has been done**

ABE faculty developed an electric pump controller to control the operation of irrigation water pumped on rice fields.

**Results**

The device enabled rice farmers to more precisely control irrigation pumping and thereby reduce both water and energy usage by reducing unnecessary pumping.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
405	Drainage and Irrigation Systems and Facilities

**Outcome #2****1. Outcome Measures**

Number of producers improving their environmental stewardship.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	50	273

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Mississippi has no licensed facility in which to dispose of these hazardous products, and the removal of these products from the rural environment reduces the associated risks to water quality, the environment, and human and animal health.

**What has been done**

ABE faculty coordinated and conducted five agricultural waste pesticide disposal programs for farmers through the Mississippi Waste Pesticide Disposal Program. A total of 103 farmers in 36 Mississippi counties participated in the five events.

**Results**

In these events, a total of 232,122 pounds of waste pesticides were collected and properly disposed of out of state by a licensed hazardous waste contractor. In addition to the water quality and environmental benefits, the programs collectively saved participating farmers \$185,600 in direct waste pesticide disposal costs that would have resulted in the absence of the program.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
405	Drainage and Irrigation Systems and Facilities

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

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

#### **Brief Explanation**

### **V(I). Planned Program (Evaluation Studies and Data Collection)**

#### 1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study

#### **Evaluation Results**

#### **Key Items of Evaluation**

**V(A). Planned Program (Summary)****Program # 10****1. Name of the Planned Program**

Family Life

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	100%		0%	
	<b>Total</b>	100%		0%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	4.5	0.0	0.3	0.0
Actual	4.7	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
117019	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
117019	0	0	0
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**

Research and extension programming will focus on family dynamics, parenting skills, human development, and aged care.

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

The target audience for this program includes all Mississippi families.

**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	6500	32100	0	0
<b>Actual</b>	13949	39608	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan: 0

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	3	0	
<b>Actual</b>	14	0	14

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

**Output Target**

**Output #1**

**Output Measure**

- Number of clientele attending workshops, seminars, and short courses.

Year	Target	Actual
2009	5751	8926

**Output #2**

**Output Measure**

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

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

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

O. No.	OUTCOME NAME
1	Number of families adopting recommended family strategies and behaviors.
2	Number of families reporting improved strengthened family life.

**Outcome #1**

**1. Outcome Measures**

Number of families adopting recommended family strategies and behaviors.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	1100	1785

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
802	Human Development and Family Well-Being

**Outcome #2**

**1. Outcome Measures**

Number of families reporting improved strengthened family life.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	880	1428

### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
802	Human Development and Family Well-Being

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

#### **External factors which affected outcomes**

- Economy
- Competing Programmatic Challenges

#### **Brief Explanation**

### V(I). Planned Program (Evaluation Studies and Data Collection)

#### 1. Evaluation Studies Planned

- Retrospective (post program)

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 11****1. Name of the Planned Program**

Family Resource Management

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
602	Business Management, Finance, and Taxation	0%		30%	
605	Natural Resource and Environmental Economics	0%		5%	
608	Community Resource Planning and Development	0%		5%	
610	Domestic Policy Analysis	0%		5%	
801	Individual and Family Resource Management	100%		0%	
802	Human Development and Family Well-Being	0%		15%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%		30%	
805	Community Institutions, Health, and Social Services	0%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	6.0	0.0	12.0	0.0
Actual	6.7	0.0	3.2	0.0

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

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
167614	0	11714	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
167614	0	107437	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	904840	0

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

**1. Brief description of the Activity**

Extension programming was conducted using the following methods: Workshops, group training; Information fairs; One-on-one consultations; Media-news, radio, TV; Publications, printed and web-based information; and Newsletters, in-print and email.

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

The target audience for this program includes almost all of the 2.8 million Mississippians.

**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	22400	32300	0	0
<b>Actual</b>	36185	28633	0	0

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

Year: 2009

Plan: 0

Actual: 0

**Patents listed****3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	10	5	
<b>Actual</b>	1	0	0

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

- Number of clientele attending seminars, workshops, and short courses.

Year	Target	Actual
2009	9865	10803

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

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

O. No.	OUTCOME NAME
1	Number of clientele adopting new practices related to financial management.
2	Number of clientele reducing debt.
3	Number of clientele increasing wealth.

**Outcome #1**

**1. Outcome Measures**

Number of clientele adopting new practices related to financial management.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	2000	2161

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
801	Individual and Family Resource Management

**Outcome #2**

**1. Outcome Measures**

Number of clientele reducing debt.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
------	---------------------	--------

2009

1600

1728

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)****What has been done****Results****4. Associated Knowledge Areas**

KA Code	Knowledge Area
801	Individual and Family Resource Management

**Outcome #3****1. Outcome Measures**

Number of clientele increasing wealth.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	800	864

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

In March 2008, the United States Environmental Protection Agency (EPA) announced new requirements for training in using lead-safe work practices for contractors and maintenance workers who renovate and repair older housing, child care facilities, and schools by 2010. It will be very difficult for all contractors and painters to comply with the new training requirements with such a short time-frame for so many to receive training. It will also be very difficult for home and property owners who wish to renovate pre-1978 structures to find certified workers and/or to receive training themselves to avoid spreading lead to their children and families and causing permanent brain damage, other health effects, or death. Structures built before 1978 when lead paint was restricted are likely to contain lead-based paint.

**What has been done**

MSU Extension Service Family Resource Management (FRM) Agents entered into partnerships with the National Center for Healthy Housing and the Alliance for Healthy Homes to receive and then provide training in their local areas using a unique video-conferencing delivery method. National expert consultants taught all-day intensive training sessions for contractor/painting professionals and do-it-yourselfers through statewide interactive video conferences using PowerPoint presentations provided by HUD and EPA. Trained FRM Area Extension Agents served as interactive video-conference hosts at eight sites in the state and were ready to teach if problems with

technology arose. They carried out the most important portion of the training at each site by leading participants through hands-on exercises using equipment needed for implementing lead safe work practices. Agents also taught do-it-yourselfer property owners in shorter face-to-face "Don't Spread Lead" workshops. Grant funding was secured to provide for training materials, travel, and expert consultant expenses, and an assistant for program coordination. Participants who passed a test at the end of training received certificates of completion.

### Results

In addition to the health impacts for Mississippi citizens who avoid lead poisoning as a result of this training, our Lead Safe Work Practices training is having a significant economic impact for the State of Mississippi and the property owners affected by Hurricane Katrina. The small Rental Assistance Program administered by the Mississippi Development Authority (MDA) has taken over 1,200 applications for up to \$30,000 grants to assist property owners in repairs and restoration, more than half of which are for pre-1978 residences. MDA is requiring owners of pre-1978 residences in mitigation for lead-based paint to attend training before issuing permission to rebuild and grants. At least 228 of MDA's property owner- grant applicants have participated in MSU's training with a potential impact of \$6,840,000 in grants that would not be received without required training.

## 4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

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

#### External factors which affected outcomes

- Economy
- Competing Programmatic Challenges

#### Brief Explanation

### V(I). Planned Program (Evaluation Studies and Data Collection)

#### 1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- Case Study

#### Evaluation Results

{No Data Entered}

#### Key Items of Evaluation

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 12****1. Name of the Planned Program**

Forestry

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
122	Management and Control of Forest and Range Fires	20%		0%	
123	Management and Sustainability of Forest Resources	45%		10%	
124	Urban Forestry	10%		10%	
125	Agroforestry	15%		15%	
133	Pollution Prevention and Mitigation	10%		10%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		35%	
211	Insects, Mites, and Other Arthropods Affecting Plants	0%		10%	
511	New and Improved Non-Food Products and Processes	0%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	13.0	0.0	7.0	0.0
Actual	12.6	0.0	1.0	0.0

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

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
314796	0	73027	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
314796	0	16549	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	185554	0

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

**1. Brief description of the Activity**

Research will be conducted in forest production and management, timber harvesting, forest recovery, and environmental impacts of forest practices. Extension programming will be conducted to share this information with forest landowners and industry personnel.

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

The audience for this program includes forest landowners and industry personnel.

**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	35200	54500	0	0
<b>Actual</b>	0	0	0	0

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

Year: 2009

Plan: 0

Actual: 0

**Patents listed****3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	2	0	
<b>Actual</b>	2	7	9

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

- Number of producers and industry attending seminars, workshops, short courses, and demonstrations.

Year	Target	Actual
2009	11039	19223

**Output #2****Output Measure**

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report



**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of timber producers adopting new technologies and practices.
2	Number of forest producers increasing profitability of their forest operations.
3	Number of producers improving their environmental stewardship.

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

Number of timber producers adopting new technologies and practices.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	2000	3845

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Mississippi has nearly 20 million acres of forestland, much of which is covered by pine trees. These pine forests provide numerous benefits to the people of Mississippi, including wood, water, wildlife habitat, and good paying jobs in the forest products industry. The southern pine bark beetles pose a significant threat to the health of these pine forests, as well as the forest products industry in Mississippi.

**What has been done**

In 2009, 10 programs for 932 participants were conducted across Mississippi. These programs dealt with pine plantation thinning and the southern pine bark beetles. In addition, a pine thinning cost share program was initiated with the Mississippi Forestry Commission to encourage landowners to thin their pine trees, thereby increasing forest health.

**Results**

To date, nearly 5,000 acres have been thinned across N. Mississippi, with another 10,000 acres enrolled in the program. The estimated damage mitigated through this program

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources
124	Urban Forestry
125	Agroforestry
133	Pollution Prevention and Mitigation

**Outcome #2****1. Outcome Measures**

Number of forest producers increasing profitability of their forest operations.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	1600	0

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

County extension personnel in Mississippi receive many requests and questions from their clientele about the status of Mississippi forests and forestry. In particular, how can forest land be managed for multiple objectives, including timber production, wildlife, and other uses.

**What has been done**

MSU Extension forestry produced a publication titled "Managing the Family Forest in Mississippi". This publication is MSU ES publication number P2470. This publication contains information on the importance of management plan, site preparation and regeneration, intermediate stand management, hardwood regeneration, economics, taxes, prescribed burning, wildlife and forest health. 25,000 copies of this publication were published, with many being distributed across Mississippi. A new extension forestry county forest landowner short course based on this publication has been developed and is being conducted in counties across Mississippi.

**Results**

Early results of the publication and workshop have been very positive. 83% of landowners have indicated they plan to hire a professional to help them manage their timber; 86% indicated they will ensure best management practices are followed the next time their timber is harvested; and over 97% felt attending the workshop will lead to increase timber profits.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
125	Agroforestry

**Outcome #3****1. Outcome Measures**

Number of producers improving their environmental stewardship.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	800	0

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

An accurate inventory of the state's forest resource is essential to ensure sustainability and proper conservation. Existing inventories relied on periodic measurements which provided an overview of the resources, but could not provide the detailed information which was often desirable for making decisions regarding utilization, business expansion, or long-term planning.

**What has been done**

MSU worked with the Mississippi Forestry Commission to develop the Mississippi Institute for Forest Inventory (MIFI) which facilitated the completion of a detailed county level inventory of the state's forest resource. MSU then developed a forest inventory Decision Support System (DSS) to assure the sustainable utilization of the state's forest resources and facilitate new investment by the forest industry.

**Results**

The DSS has been used for

1. 97 installation or analytical support requests
2. 71 detailed analyses
3. 26 species product, diameter distribution, growth/drain ratios and spatial distribution analyses
4. 22 cellulosic facilities pursuing capital funding for locating mills in Mississippi
5. 2 forest industries making preparing to begin operations in Mississippi
6. 7 electrical generation (from biomass) facilities

We anticipate the DSS will continue to be a valuable tool for land managers and investment planners for the foreseeable future.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
122	Management and Control of Forest and Range Fires

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

**External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

**Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study

**Evaluation Results**

**Key Items of Evaluation**

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

**Program # 13**

**1. Name of the Planned Program**

Human Health

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

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
132	Weather and Climate	0%		10%	
610	Domestic Policy Analysis	0%		30%	
723	Hazards to Human Health and Safety	0%		10%	
724	Healthy Lifestyle	100%		0%	
802	Human Development and Family Well-Being	0%		50%	
	<b>Total</b>	100%		100%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	9.0	0.0	4.0	0.0
Actual	5.6	0.0	0.8	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
139819	0	1057	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
139819	0	10151	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	318732	0

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

1. Brief description of the Activity

Research in healthy lifestyles education will be complemented by Extension programming, including the following methods:  
 Training programs  
 Video conferences  
 Health fairs  
 Workshops  
 Partnership development

Needs assessment  
 Leadership training  
 Strategic planning

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

The audience for this program includes all Mississippians, with a specific focus on those who are overweight and/or have hypertension, and high blood cholesterol.

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

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	60000	82000	0	0
<b>Actual</b>	44548	36953	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	2	1	
<b>Actual</b>	6	1	7

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

**Output Target**

**Output #1**

**Output Measure**

- Number of clientele attending workshops, seminars, and short courses.

Year	Target	Actual
2009	22981	13583

**Output #2**

**Output Measure**

- Number of articles/abstracts in journals, proceedings, and edited books.  
 Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of clientele reporting changes in lifestyle to improve health.
2	Number of clientele reporting decreases in at least one indicator (blood pressure, blood cholesterol, body mass index).

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

Number of clientele reporting changes in lifestyle to improve health.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	4500	2717

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

According to statistics released by the Mississippi State Department of Health:

\*Cardiovascular Disease is the leading cause of death in Mississippi, accounting for 41% of all deaths in the state. Mississippi's CVD mortality rate is the highest in the nation, with a mortality rate in 2005 that was 25% higher than the U.S. as a whole.

\*Diabetes is a major cause of morbidity, disability, and mortality for Mississippians and a major source of health care costs in the state. Diabetes is the eighth leading cause of death in Mississippi.

Factors contributing to the prevalence of chronic disease in Mississippi:

\*Hypertension: Thirty-three percent (33%) of Mississippians have hypertension.

\*High blood cholesterol: Thirty-eight per-cent (38%) of Mississippians report having high blood cholesterol.

\*Lack of regular physical activity: About 60% of adult Mississippians report a lack of physical activity on a regular basis.

\*Being overweight/obese: Mississippi has the highest obesity rate in the nation. Thirty-six (36%) of adults are obese; 33% overweight.

An individual's cholesterol, blood pressure, blood sugar, and body mass index numbers are vital indicators of his/her risk level for developing a major illness. Knowing these numbers and what they mean empowers an individual to take action and reduce their chances of developing heart disease, diabetes, hypertension, and other chronic illnesses.

**What has been done**

Extension joined forces with the Mississippi Chronic Illness Coalition to develop and teach a program called Know Your Numbers. Know Your Numbers teaches people, in an entertaining, informative format, the importance of knowing, understanding and recording their cholesterol, blood sugar, BMI, and blood pressure numbers. Keeping these numbers in a healthy range lessens the risks of developing cardiovascular disease, diabetes and other chronic illnesses.

Area Extension Health Agents are utilizing the Know Your Numbers curriculum statewide.

## Results

Area Extension Agents have taught over 600 people across the state through community programs the importance of knowing the impact these key numbers can have on their current and future health. Evaluations indicate that the majority of participants have learned the healthy range for their blood sugar, cholesterol, BMI and blood pressure numbers and the associated benefits of keeping them in a healthy range to prevent hypertension, diabetes, heart disease and other chronic disease.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

## Outcome #2

### 1. Outcome Measures

Number of clientele reporting decreases in at least one indicator (blood pressure, blood cholesterol, body mass index).

### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

### 3a. Outcome Type:

Change in Condition Outcome Measure

### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	3600	2713

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

For the fifth straight year, Mississippi has earned the title of "Heaviest State" in the Union. 70 percent of our population is overweight and 32.8% is obese. All are at increased risk of developing diabetes, heart disease, kidney disease, and some types of cancer. Youth at risk: 44.4 percent of Mississippi children ages 10-17 are classified as overweight or obese.

#### What has been done

MS In Motion, a 12-week healthy lifestyle program, gives individuals the skills, knowledge, and the support to make positive lifestyle behavior changes in the state of Mississippi. One of the many positives of the program this year includes the fact that we have been asked to return to many groups, organizations, and industries to provide the program again for participants. We had eight counties lined up for the spring of 2009 with 2,121 individuals attend sessions during the 10 weeks of actual programming. For the fall of 2009, we worked with ten schools and their counties in conjunction with the Bower Foundation, the MS Department of Education to provide MS In Motion to all school personnel. We had 447 people weigh-in representing the 10 schools and we had 232 people weigh-out (roughly a 52% completion rate), with 1,964 people attending the 10 week sessions provided at the schools by professionals. Both nutrition and health agents helped to provide the programs over a period of 12 weeks to the ten schools around the state. Funding for the cholesterol, glucose, and blood pressure screenings is provided by the Bower Foundation to the Mississippi Department of Health to provide these screenings at the beginning and

end of MS In Motion for these schools. By providing health screenings at the beginning and end of the program, we are able to refer clients for additional screening if they have high blood pressure or high glucose readings at the time of the weigh-in. Many times, until these screenings, people were unaware that they had high blood pressure or they had type 2 diabetes.

#### **Results**

Pre-Post survey returns from the 10 Bower Schools (n=230) participants lost a total of 725.9 lbs. There was a significant decrease (p<.001) in weight, BMI, and blood glucose and cholesterol, and a significant increase (p<.001) in fruit and vegetable intake, water intake, and physical activity. There was also a significant increase (p<.001) from pre to post survey, in self-esteem, appearance, and mobility. In 2009, Neshoba County had 43 people weigh out, with an average weight loss of 8.10 lbs. In general, the average weight lost during the program is 5 lbs. over the 12 weeks.

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

<b>KA Code</b>	<b>Knowledge Area</b>
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

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

##### **External factors which affected outcomes**

- Economy
- Other (Cultural traditions)

##### **Brief Explanation**

The goals for numbers reached and outcome goals were unmet because part of the programming previously reported here is now covered in the program Childhood Obesity.

#### **V(I). Planned Program (Evaluation Studies and Data Collection)**

##### **1. Evaluation Studies Planned**

- Before-After (before and after program)

#### **Evaluation Results**

#### **Key Items of Evaluation**

**V(A). Planned Program (Summary)****Program # 14****1. Name of the Planned Program**

Horticulture

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
102	Soil, Plant, Water, Nutrient Relationships	15%		15%	
204	Plant Product Quality and Utility (Preharvest)	15%		15%	
205	Plant Management Systems	60%		60%	
601	Economics of Agricultural Production and Farm Management	10%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	20.0	0.0	9.0	0.0
Actual	23.2	0.0	4.8	0.0

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

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
580391	0	349610	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
580391	0	357791	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	954123	0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Research and extension activities designed to

1. Increase producer profitability by promoting cultural practices that are research based.
2. Improve marketing of horticultural crops.
3. Determine producer needs via interaction with commodity groups, grower meetings, advisory councils, etc.
4. Reduce economic and environmental impact of chemicals by implementing integrated pest management techniques in commercial production.
5. Increase production efficiency by decreasing labor requirements, i.e. mechanization, automation, etc.

6. Continue selection of appropriate varieties for local environments in Mississippi.

## 2. Brief description of the target audience

The target audience includes producers, manufacturers, suppliers, managers, and consumers, within the vegetable and fruit production, turf, floriculture, and ornamental nursery industries.

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

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	57600	88000	0	0
<b>Actual</b>	125366	144580	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 1

##### Patents listed

Crapemyrtle plant name 'chocolate mocha'

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

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	4	5	
<b>Actual</b>	7	9	16

### V(F). State Defined Outputs

#### Output Target

##### Output #1

###### Output Measure

- Number of clientele attending seminars, workshops, short courses, and demonstrations.

Year	Target	Actual
2009	26201	44991

##### Output #2

###### Output Measure

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of clientele adopting new technologies, strategies, systems, or cultivars.
2	Number of producers increasing profitability levels.
3	Number of clientele improving their environmental stewardship.

**Outcome #1**

**1. Outcome Measures**

Number of clientele adopting new technologies, strategies, systems, or cultivars.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	5000	8998

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management

**Outcome #2**

**1. Outcome Measures**

Number of producers increasing profitability levels.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	4000	7199

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management

**Outcome #3**

**1. Outcome Measures**

Number of clientele improving their environmental stewardship.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	2000	3599

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships

205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management

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

**External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

**Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 15****1. Name of the Planned Program**

Integrated Pest Management

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

## 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
133	Pollution Prevention and Mitigation	0%		5%	
205	Plant Management Systems	10%		0%	
206	Basic Plant Biology	5%		0%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		65%	
212	Pathogens and Nematodes Affecting Plants	5%		0%	
213	Weeds Affecting Plants	5%		0%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%		0%	
215	Biological Control of Pests Affecting Plants	10%		0%	
216	Integrated Pest Management Systems	50%		5%	
311	Animal Diseases	0%		10%	
402	Engineering Systems and Equipment	0%		5%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	0%		10%	
	<b>Total</b>	100%		100%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	3.5	0.0	8.0	0.0
Actual	7.1	0.0	4.5	0.0

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

Extension		Research	
<b>Smith-Lever 3b &amp; 3c</b> 176815	<b>1890 Extension</b> 0	<b>Hatch</b> 117552	<b>Evans-Allen</b> 0
<b>1862 Matching</b> 176815	<b>1890 Matching</b> 0	<b>1862 Matching</b> 451336	<b>1890 Matching</b> 0
<b>1862 All Other</b> 0	<b>1890 All Other</b> 0	<b>1862 All Other</b> 877937	<b>1890 All Other</b> 0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Research and extension programming will be conducted many IPM areas, including the following:

- urban entomology and plant pathology
- plant disease and nematode diagnostics
- cotton pest management
- greenhouse tomato pest management
- soybean management by application of research and technology

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

The target audience for this program includes home pest control providers, homeowners, cotton producers, soybean producers, and greenhouse tomato producers.

**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	8800	19200	0	0
<b>Actual</b>	23125	18229	0	0

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

Year: 2009  
Plan: 0  
Actual: 1

**Patents listed**

Novel antifungal oligopeptide occidiofungin produced by burkholderia contaminans strain MS14

**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	2	2	
<b>Actual</b>	9	10	19

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

## Output Target

### Output #1

#### Output Measure

- Number of clientele attending workshops, seminars, short courses, and demonstrations.

Year	Target	Actual
2009	4267	6892

### Output #2

#### Output Measure

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of producers adopting IPM production practices.
2	Number of producers increasing profits.
3	Number of producers reducing environmental impacts of pesticide use.

**Outcome #1**

**1. Outcome Measures**

Number of producers adopting IPM production practices.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	800	1378

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
205	Plant Management Systems
206	Basic Plant Biology
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems

**Outcome #2**

**1. Outcome Measures**

Number of producers increasing profits.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	640	1103

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

**Outcome #3**

**1. Outcome Measures**

Number of producers reducing environmental impacts of pesticide use.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	640	1103

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

**Issue (Who cares and Why)**

**What has been done**

## Results

### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems

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

#### External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

#### Brief Explanation

### V(I). Planned Program (Evaluation Studies and Data Collection)

#### 1. Evaluation Studies Planned

- Retrospective (post program)
- Case Study

#### Evaluation Results

{No Data Entered}

#### Key Items of Evaluation

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 16****1. Name of the Planned Program**

Family Leadership Development

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

## 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
805	Community Institutions, Health, and Social Services	100%		100%	
	<b>Total</b>	100%		100%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	9.5	0.0	0.0	0.0
Actual	10.4	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
258652	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
258652	0	0	0
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

Extension programming efforts on numerous aspects of leadership and volunteerism. The primary focus is workshops and cooperative activities with local volunteer groups such as Mississippi Homemaker Volunteers.

## 2. Brief description of the target audience

The target audience for this program includes anyone interested in improving their community. Specific groups include master extension volunteers, 4-H volunteers, and community leaders.

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

## 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	102452	25613	0	0
<b>Actual</b>	48683	100701	0	0

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

Year: 2009

Plan: 0

Actual: 0

**Patents listed****3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	0	0	
<b>Actual</b>	0	0	0

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

- Number of clientele attending workshops, seminars, and short courses.

Year	Target	Actual
2009	17075	24897

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

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

O. No.	OUTCOME NAME
1	Number of clientele who improve their leadership skills.
2	Number of clientele who make use of leadership skills by volunteering for community organizations.

**Outcome #1**

**1. Outcome Measures**

Number of clientele who improve their leadership skills.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	3400	4979

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services

**Outcome #2**

**1. Outcome Measures**

Number of clientele who make use of leadership skills by volunteering for community organizations.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	2720	3984

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

#### What has been done

#### Results

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services

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

#### External factors which affected outcomes

- Economy
- Competing Programmatic Challenges

#### Brief Explanation

The number of extension direct contacts was overestimated in the plan. Extension agents and specialists are using more technology-based methods, thereby demonstrating an increase in indirect contacts and a decrease in direct contacts. This has been addressed in the 2011-2015 plan of work.

### V(I). Planned Program (Evaluation Studies and Data Collection)

#### 1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)

#### Evaluation Results

{No Data Entered}

#### Key Items of Evaluation

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 17****1. Name of the Planned Program**

Human Nutrition

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

## 1. Program Knowledge Areas and Percentage

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
205	Plant Management Systems	0%		5%	
303	Genetic Improvement of Animals	0%		5%	
502	New and Improved Food Products	0%		5%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		5%	
703	Nutrition Education and Behavior	85%		20%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	15%		50%	
801	Individual and Family Resource Management	0%		10%	
	<b>Total</b>	100%		100%	

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

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

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	17.5	0.0	16.0	0.0
Actual	18.3	0.0	4.3	0.0

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

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
457444	0	93845	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
457444	0	315187	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	70572	0

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

## 1. Brief description of the Activity

Research and extension activities were carried out, including partnering with community groups and schools to set up

educational opportunities, providing training and updating training of professional groups on USDA nutrition recommendations. Educational programs were provided for general public audiences, both adult and youth.

## 2. Brief description of the target audience

The target audience is all Mississippians, but special emphasis has been placed on those groups who historically have demonstrated poor nutrition behaviors, including low-income and racial minorities (both parents and children are targeted).

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

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	213891	133473	220000	0
<b>Actual</b>	185509	336758	293722	533202

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

#### Patents listed

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

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	2	10	
<b>Actual</b>	3	12	0

### V(F). State Defined Outputs

#### Output Target

##### Output #1

##### Output Measure

- Number of clientele attending workshops, seminars, and short courses.

Year	Target	Actual
2009	88982	224866

##### Output #2

##### Output Measure

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

<b>O. No.</b>	<b>OUTCOME NAME</b>
1	Number of clientele who learn how to use the food pyramid and nutritional guidelines to make food decisions.
2	Number of clientele who adopt practices to fit their diets within the dietary guidelines.
3	Number of clientele reporting improvements in food preparation techniques.
4	Number of clientele reporting improved health and/or well-being due to changes in diet.
5	Reduce the incidence of reported food-borne illnesses.

**Outcome #1**

**1. Outcome Measures**

Number of clientele who learn how to use the food pyramid and nutritional guidelines to make food decisions.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	18000	44973

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
703	Nutrition Education and Behavior

**Outcome #2**

**1. Outcome Measures**

Number of clientele who adopt practices to fit their diets within the dietary guidelines.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
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2009                      14400                      44973

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
703	Nutrition Education and Behavior

**Outcome #3**

**1. Outcome Measures**

Number of clientele reporting improvements in food preparation techniques.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	7200	35978

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

## **Outcome #4**

### **1. Outcome Measures**

Number of clientele reporting improved health and/or well-being due to changes in diet.

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

- 1862 Extension
- 1862 Research

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

Change in Condition Outcome Measure

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

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2009	7200	17989

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

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

<b>KA Code</b>	<b>Knowledge Area</b>
703	Nutrition Education and Behavior

## **Outcome #5**

### **1. Outcome Measures**

Reduce the incidence of reported food-borne illnesses.

Not Reporting on this Outcome Measure

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

#### **External factors which affected outcomes**

- Economy
- Competing Public priorities
- Competing Programmatic Challenges

#### **Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 18****1. Name of the Planned Program**

Poultry

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
301	Reproductive Performance of Animals	10%		10%	
302	Nutrient Utilization in Animals	10%		45%	
305	Animal Physiological Processes	10%		10%	
306	Environmental Stress in Animals	10%		10%	
307	Animal Management Systems	10%		5%	
308	Improved Animal Products (Before Harvest)	10%		0%	
311	Animal Diseases	10%		10%	
312	External Parasites and Pests of Animals	10%		0%	
313	Internal Parasites in Animals	10%		0%	
315	Animal Welfare/Well-Being and Protection	10%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	1.0	0.0	6.0	0.0
Actual	1.2	0.0	2.0	0.0

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

<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
29898	0	172532	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
29898	0	384545	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	817894	0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Extension personnel will communicate with poultry producers and the general public through seminars, workshops, and extension bulletins and newsletters distributed in paper copy and electronically via the internet. Field demonstrations may also be required to encourage acceptance of new practices and methodologies. Results of research projects may also be published in peer-reviewed scientific journals. Research disseminated to the stakeholders will consist of, but is not limited to, the following:

- Flock hatchability and fertility
- Male broiler breeder viability measurements
- Dietary and managerial regimes to decrease layer Mycoplasma infections
- Optimizing early chick performance through: broiler and breeder nutrition, embryo physiological assessment, incubation management, and physiological assessment
- Applied nutrition with feed additives and alternative feed ingredients
- Ammonia management in broiler houses: minimization of nitrogen input, ammonia chemical modification and capture, and ammonia impacts on bird performance
- Minimization of physiological stress in broilers and layers
- Understanding broiler intestinal microorganisms and their role in nutrient utilization and disease
- Identification of physiological responses associated with poultry welfare.

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

The target audience for this program consists of commercial poultry producers and related industry personnel.

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

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	712	1210	0	0
<b>Actual</b>	2424	1415	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 1

**Patents listed**

Variable stage humidity control for poultry hatcheries

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
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<b>Plan</b>	1	3	
<b>Actual</b>	0	15	18

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

**Output Target**

**Output #1**

**Output Measure**

- Number of producers attending seminars, workshops, short courses, and demonstrations.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	176	640

**Output #2**

**Output Measure**

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of producers adopting new technologies, strategies, or systems.
2	Number of producers increasing production efficiency.
3	Number of producers reducing the environmental impact of production.

**Outcome #1**

**1. Outcome Measures**

Number of producers adopting new technologies, strategies, or systems.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	50	128

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals
315	Animal Welfare/Well-Being and Protection

**Outcome #2**

**1. Outcome Measures**

Number of producers increasing production efficiency.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	40	102

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
311	Animal Diseases
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals
315	Animal Welfare/Well-Being and Protection

**Outcome #3**

**1. Outcome Measures**

Number of producers reducing the environmental impact of production.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	40	102

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**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
- Government Regulations
- Competing Programmatic Challenges

**Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 19****1. Name of the Planned Program**

Agribusiness/Risk Farm Management

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

## 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	40%		20%	
602	Business Management, Finance, and Taxation	0%		40%	
604	Marketing and Distribution Practices	40%		20%	
610	Domestic Policy Analysis	20%		20%	
	<b>Total</b>	100%		100%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	3.3	0.0
Actual	2.0	0.0	2.0	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
50738	0	75937	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
50738	0	280729	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	228092	0

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

## 1. Brief description of the Activity

This program includes three areas designed to assist farmers in making their enterprises more profitable:

The Farm Management Information and Training area provides farmers and agribusiness professionals with timely and relevant information on a variety of topics potentially impacting management decisions on their operations. It offers a number of practical decision aids along with training on the use of these aids as well as providing a resource for managers who need help with business planning.

The Extension Agricultural Marketing Information and Education area provides producers of major row crops, cattle, milk

and dairy products, catfish, fruits and vegetables, and horticultural crops with regular, timely updates on conditions in these commodity markets. In addition, training will be made available on the use of commonly used marketing tools and strategies.

The Agricultural Policy Analysis and Education area provides producers, lenders and other input providers, and rural community leaders with timely and relevant information on existing farm, conservation, and international trade programs as well as analysis of the potential impact of proposed policy changes.

## 2. Brief description of the target audience

The target audience for this program consists primarily of agricultural producers and related agribusiness personnel.

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

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	5000	10000	0	0
<b>Actual</b>	5303	5508	0	0

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

##### Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

##### Patents listed

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

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>	2	2	
<b>Actual</b>	0	5	5

### V(F). State Defined Outputs

#### Output Target

##### Output #1

###### Output Measure

- Number of producers attending workshops, seminars, and short courses.

Year	Target	Actual
2009	2715	1802

##### Output #2

###### Output Measure

- Number of articles/abstracts in journals, proceedings, and edited books.

Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of producers adopting recommended strategies in management, marketing, and government program use.
2	Number of producers indicating increased profitability due to implementation of recommended strategies.

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

Number of producers adopting recommended strategies in management, marketing, and government program use.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	500	360

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Prices of agricultural outputs have exhibited unprecedented variability in recent years. At the same time, prices of critical inputs such as fuel and nitrogen fertilizer have also exhibited great variability. These phenomena have been variously attributed to the increasing integration of agricultural and energy markets through increasing biofuel production, macroeconomic instability, and the recent financial crisis. Regardless of the cause, price instability creates significant challenges for farmers.

**What has been done**

These challenges created the need for proper education related to commodity marketing. As a result Extension commodity marketing specialists in the Department of Agricultural Economics conducted numerous workshops in the wake of the economic turmoil. These primarily included information on the current market structure as well as an outlook that provided some parameters for producers to make informed decisions in their agricultural enterprises - for both livestock and crop producers.

Beyond the market update and outlook workshops, the specialists also conducted workshops that provided in-depth information on how to reduce the increased variability in prices (primarily output prices). The focus of these workshops involved using futures and forward contracts that allow producers to offset price risk. Futures and forward contracts were explained in detail so that producers could incorporate these into their farm management planning.

**Results**

With the rise, and subsequent fall, in commodity prices - along with the increased production risk that was experienced in 2009 - producers must be equipped with market information that will help them reduce their exposure to financial peril. The Department of Agricultural Economics dispersed this information in a timely manner through multiple outlets.

**4. Associated Knowledge Areas**

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

- 604 Marketing and Distribution Practices
- 610 Domestic Policy Analysis

**Outcome #2**

**1. Outcome Measures**

Number of producers indicating increased profitability due to implementation of recommended strategies.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	400	288

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

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

**External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

**Brief Explanation**

Because of a loss of overall positions in this area, the amount of programming in this area was lower than expected in the original 5-Year plan of work. This has been addressed in the 2011-2015 plan of work.

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 20****1. Name of the Planned Program**

Wildlife and Fisheries

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

## 1. Program Knowledge Areas and Percentage

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
131	Alternative Uses of Land	0%		10%	
135	Aquatic and Terrestrial Wildlife	30%		20%	
136	Conservation of Biological Diversity	15%		5%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%		0%	
312	External Parasites and Pests of Animals	0%		25%	
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	5%		0%	
502	New and Improved Food Products	0%		15%	
604	Marketing and Distribution Practices	0%		15%	
605	Natural Resource and Environmental Economics	30%		0%	
722	Zoonotic Diseases and Parasites Affecting Humans	5%		5%	
903	Communication, Education, and Information Delivery	10%		5%	
	<b>Total</b>	100%		100%	

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

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

<b>Year: 2009</b>	<b>Extension</b>		<b>Research</b>	
	<b>1862</b>	<b>1890</b>	<b>1862</b>	<b>1890</b>
Plan	8.5	0.0	1.0	0.0
Actual	9.1	0.0	0.5	0.0

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

Extension		Research	
<b>Smith-Lever 3b &amp; 3c</b> 228490	<b>1890 Extension</b> 0	<b>Hatch</b> 0	<b>Evans-Allen</b> 0
<b>1862 Matching</b> 228490	<b>1890 Matching</b> 0	<b>1862 Matching</b> 0	<b>1890 Matching</b> 0
<b>1862 All Other</b> 0	<b>1890 All Other</b> 0	<b>1862 All Other</b> 261388	<b>1890 All Other</b> 0

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

**1. Brief description of the Activity**

In-state and multistate research and extension activities will be carried out related to wildlife habitat management, wildlife enterprise development, and human-wildlife conflicts.

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

The target audience for this project consists of most Mississippians, including those who hunt, fish, and watch wildlife, those who interact with wildlife and work and home, and those who work in related industries and professions.

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

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	23736	16000	0	0
<b>Actual</b>	39753	13322	0	0

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

**Patent Applications Submitted**

Year: 2009  
 Plan: 0  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>	2	4	
<b>Actual</b>	6	0	6

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

**Output Target**

**Output #1**

**Output Measure**

- Number of clientele attending seminars, workshops, short courses, and demonstrations.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2009	3956	8846

**Output #2**

**Output Measure**

- Number of articles/abstracts in journals, proceedings, and edited books.  
Not reporting on this Output for this Annual Report

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

<b>O. No.</b>	<b>OUTCOME NAME</b>
1	Number of clientele adopting recommended wildlife habitat improvement practices.
2	Number of wildlife professionals improving their skills in handling wildlife damage issues.
3	Number of non-industrialized, private landowners initiating wildlife-related enterprises.
4	Number of landowners reporting improved wildlife conservation due to management practices.
5	Number of clientele reporting increased income levels due to wildlife enterprises.

**Outcome #1**

**1. Outcome Measures**

Number of clientele adopting recommended wildlife habitat improvement practices.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	800	1769

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
605	Natural Resource and Environmental Economics
722	Zoonotic Diseases and Parasites Affecting Humans
903	Communication, Education, and Information Delivery

**Outcome #2**

**1. Outcome Measures**

Number of wildlife professionals improving their skills in handling wildlife damage issues.

Not Reporting on this Outcome Measure

**Outcome #3**

**1. Outcome Measures**

Number of non-industrialized, private landowners initiating wildlife-related enterprises.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	320	708

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
136	Conservation of Biological Diversity
605	Natural Resource and Environmental Economics
903	Communication, Education, and Information Delivery

**Outcome #4**

**1. Outcome Measures**

Number of landowners reporting improved wildlife conservation due to management practices.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	200	1415

### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
605	Natural Resource and Environmental Economics

### Outcome #5

#### 1. Outcome Measures

Number of clientele reporting increased income levels due to wildlife enterprises.

Not Reporting on this Outcome Measure

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

#### External factors which affected outcomes

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

#### Brief Explanation

### V(I). Planned Program (Evaluation Studies and Data Collection)

#### 1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study

### Evaluation Results

### Key Items of Evaluation



**V(A). Planned Program (Summary)****Program # 21****1. Name of the Planned Program**

Childhood Obesity

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
724	Healthy Lifestyle	100%		0%	
	<b>Total</b>	100%		0%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	3.7	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
93212	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
93212	0	0	0
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**

Extension programming was provided as follows: face-to-face workshops, interactive video workshops, demonstrations (including Body Walk), newsletters, web-based information, (including Families, Food and Fitness page on eXtension).

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

The target for this program includes both adults and children. In Mississippi, 32.5% of adults and 44.4% of children were classified as obese according to a Robert Wood Johnson Foundation study in July 2009. To reach the children, adults must change their habits as well.

**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
<b>Actual</b>	14849	12318	14849	12318

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

**Patent Applications Submitted**

Year: 2009

Plan:

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>			
<b>Actual</b>	4	0	4

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

**Output Target**

**Output #1**

**Output Measure**

- Number of people attending workshops.

Year	Target	Actual
2009	{No Data Entered}	9056

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

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

O. No.	OUTCOME NAME
1	Number of people reporting a positive change in health behavior(s).
2	Number of people reporting improvement in at least one healthy outcome (body mass index, blood glucose, blood pressure, cholesterol, etc.).

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

Number of people reporting a positive change in health behavior(s).

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	1811

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Fifty seven volunteers from nine counties across the state have been trained as Healthy Futures Volunteers. Over 925 people have been reached with health messages. The volunteers have reported 290 hours of community service associated with Healthy Futures. Community service hours can also be earned through community engagement. Some examples of volunteer service exhibited in various communities to promote healthy living for seniors consisted of: helping seniors fill out Medicare forms, assisting with health fairs, working with faith-based organizations to provide social activities for seniors, entertaining seniors at planned gatherings, working with local law enforcement to establish a community organization focused on senior safety and volunteering to help start a senior activity center. The program encourages volunteer service and leadership. This involvement is helpful in decreasing isolation and depression and aids in encouraging socialization, community involvement, and renews leadership and collaboration skills that may have been lost over time.

**What has been done**

In the calendar year of 2009 Body Walk serviced over 21,000 students in Mississippi from over 90 schools in 38 counties. Students actually walk through a replica of their bodies, learning about the effects of different activities and behaviors. To help these students, Body Walk had community members and high schools students who volunteered in the different stations of the Body Walk.

**Results**

As a Result of Body Walk...

- \* Schools will use the Body Walk exhibit and its related materials to give children repeated opportunities to practice healthy behavior skills.
- \* Children will learn about the digestive system by walking through the exhibit.
- \* Children will remember the exhibit because of the active learning.
- \* Linking nutrition, health and physical activity will help reinforce positive health behaviors and raise the value placed on health.
- \* Children's eating and health behaviors will improve through learning skills needed to practice lifelong healthy behaviors.
- \* There will be a greater awareness among parents, school personnel, and community members of the importance of teaching children to practice healthy behaviors.

**4. Associated Knowledge Areas**

**KA Code**    **Knowledge Area**  
 724            Healthy Lifestyle

**Outcome #2**

**1. Outcome Measures**

Number of people reporting improvement in at least one healthy outcome (body mass index, blood glucose, blood pressure, cholesterol, etc.).

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	1449

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

**KA Code**    **Knowledge Area**  
 724            Healthy Lifestyle

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

**External factors which affected outcomes**

- Economy
- Competing Programmatic Challenges

**Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 22****1. Name of the Planned Program**

Food Safety

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
503	Quality Maintenance in Storing and Marketing Food Products	0%		10%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	10%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	90%		90%	
<b>Total</b>		100%		100%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	3.2	0.0	1.2	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
80725	0	79156	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
80725	0	61084	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	846490	0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Extension educational programming will be offered, including food safety certification courses for foodservice professionals.

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

General public (adults and youth) and foodservice professionals.

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

#### 1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
<b>Actual</b>	20612	37418	15459	28063

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

##### Patent Applications Submitted

Year: 2009

Plan:

Actual: 0

##### Patents listed

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

##### Number of Peer Reviewed Publications

2009	Extension	Research	Total
<b>Plan</b>			
<b>Actual</b>	3	13	16

### V(F). State Defined Outputs

#### Output Target

##### Output #1

##### Output Measure

- Number of people attending certification courses.

Year	Target	Actual
2009	{No Data Entered}	570

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

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

O. No.	OUTCOME NAME
1	Number of foodservice professionals achieving required certification in food handling techniques.

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

Number of foodservice professionals achieving required certification in food handling techniques.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2009	{No Data Entered}	462

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Under the Mississippi Food Code, anyone serving food for pay is required to have a permit to operate their facility. As part of the permit, facilities are required to show documentation of food safety knowledge. This requirement applies to commercial, institutional, catering and other foodservice establishments in Mississippi. The required training leads to cleaner and safer facilities and employees who have an increased knowledge of how food becomes unsafe and what groups are at an increased risk for foodborne illnesses. Cleaner and safer facilities, combined with routine inspection by the Mississippi Department of Health reduce the risk of contamination by food to the Mississippi population.

**What has been done**

Mississippi State University Extension Service(MSU-ES), in partnership with the Mississippi Restaurant and Hospitality Association, the National Restaurant Association, and the Mississippi State Department of Health, provides the primary food safety management certification course used in Mississippi. The ServSafe program is an 8 to 16 hour face-to-face training with a national certification offered by the National Restaurant Association Educational Foundation. Certification lasts for a five-year period. MSU-ES employees provide the course to managers, owners, and foodservice employees from a variety of foodservice settings, including commercial restaurants, hospitals, school foodservice, childcare centers, and other locations where food safety policies and procedures are required and necessary to protect public health. MSU-ES offers both an 8-hour training module, for those individuals who are recertifying or have a background in food safety, and a 16-hour training module for those who are new to food safety management or need additional time for training and instruction. It is the 16-hour training that is unique to MSU-ES and this extended training format continues to benefit many individuals who request a more in-depth training.

**Results**

Between September 2008 and August 2009, 40 classes were taught to 570 individuals seeking certification throughout the state of Mississippi. Classes were offered in many Mississippi counties including, Washington, Grenada, Sunflower, Oktibbeha, Jones, Lauderdale, Kemper, Perry, Stone, Attala, Montgomery, Panola, Harrison, Adams, Carroll, Yalobusha, Monroe, and Newton. Passage rate for all attendees taking the certification exam was 81% (462 attendees).

**4. Associated Knowledge Areas**

**KA Code    Knowledge Area**

712

Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

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

**External factors which affected outcomes**

- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

**Brief Explanation**

**V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

**Evaluation Results**

**Key Items of Evaluation**

**V(A). Planned Program (Summary)****Program # 23****1. Name of the Planned Program**

Global Food Security and Hunger

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

## 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%		0%	
204	Plant Product Quality and Utility (Preharvest)	15%		0%	
205	Plant Management Systems	30%		0%	
307	Animal Management Systems	30%		0%	
308	Improved Animal Products (Before Harvest)	15%		0%	
	<b>Total</b>	100%		0%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	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	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
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

Efforts made in this program area have been described in 7 other planned programs. The new plan reflects a change from those programs to this one.

## 2. Brief description of the target audience

The target audience for this program is Mississippi agricultural producers (both plant and animal production) and through them, food consumers.

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

**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan:

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>			
<b>Actual</b>	0	0	0

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

**Output Target**

**Output #1**

**Output Measure**

- Number of people attending events.  
Not reporting on this Output for this Annual Report

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

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

O. No.	OUTCOME NAME
1	Number of producers adopting new practices based on research/extension recommendations.

## **Outcome #1**

### **1. Outcome Measures**

Number of producers adopting new practices based on research/extension recommendations.

Not Reporting on this Outcome Measure

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

#### **External factors which affected outcomes**

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

#### **Brief Explanation**

### **V(I). Planned Program (Evaluation Studies and Data Collection)**

1. Evaluation Studies Planned

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

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

**Program # 24**

**1. Name of the Planned Program**

Climate Change

**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	15%		0%	
132	Weather and Climate	85%		0%	
<b>Total</b>		100%		0%	

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

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	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	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
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

Efforts made in this program area have been indistinguishable from those within other planned programs. The new plan reflects a new focus in this program area.

2. Brief description of the target audience

The target audience for this program is agricultural producers (plant and animal) that may be affected by climate changes and their impact on resources necessary for production.

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

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Plan</b>	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
<b>Actual</b>	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan:

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
<b>Plan</b>			
<b>Actual</b>	0	0	0

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

**Output Target**

**Output #1**

**Output Measure**

- Number of people attending events.  
Not reporting on this Output for this Annual Report

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

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

O. No.	OUTCOME NAME
1	Number of producers adopting practices based on research/extension recommendations.

## **Outcome #1**

### **1. Outcome Measures**

Number of producers adopting practices based on research/extension recommendations.

Not Reporting on this Outcome Measure

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

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

#### **Brief Explanation**

### **V(I). Planned Program (Evaluation Studies and Data Collection)**

#### 1. Evaluation Studies Planned

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}

**V(A). Planned Program (Summary)****Program # 25****1. Name of the Planned Program**

Sustainable Energy

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
402	Engineering Systems and Equipment	70%		0%	
403	Waste Disposal, Recycling, and Reuse	30%		0%	
	<b>Total</b>	100%		0%	

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	0.0	0.0	0.0	0.0

Actual	0.0	0.0	0.0	0.0
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**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
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**

Efforts made in this program area have been indistinguishable from those within other planned programs. The new plan reflects a new focus in this program area.

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

The target audience for this program is generally producers of crops used to create energy sources (corn for ethanol, soybeans for biodiesel, etc.) and the producers and distributors of those energy sources.

**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual	0	0	0	0

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

**Patent Applications Submitted**

Year: 2009

Plan:

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
Plan			
Actual	0	0	0

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

**Output Target**

**Output #1**

**Output Measure**

- Number of people attending events.  
Not reporting on this Output for this Annual Report

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

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

O. No.	OUTCOME NAME
1	Number of producers adopting/changing practices due to research/extension recommendations.

## **Outcome #1**

### **1. Outcome Measures**

Number of producers adopting/changing practices due to research/extension recommendations.

Not Reporting on this Outcome Measure

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

#### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

#### **Brief Explanation**

### **V(I). Planned Program (Evaluation Studies and Data Collection)**

#### **1. Evaluation Studies Planned**

#### **Evaluation Results**

{No Data Entered}

#### **Key Items of Evaluation**

{No Data Entered}