2011 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 24 programs defined in the Five-Year Plan.

This report includes efforts and results related to a total Hatch appropriation of $ 4,870,377 and a total Smith-Lever appropriation of $6,848,278. In FY 2011, MAFES had 596 grants awarded for a total of nearly $20 million.

The MSU Extension Service provides research-based information, educational programs, and technology transfer focused on issues and needs of the people of Mississippi, enabling them to make informed decisions about their economic, social, and cultural well-being. The MSU Extension delivers programming in Agriculture and Natural Rresources, Family and Consumer Sciences, 4-H Youth Development, and Enterprise and Community Development. During FY 2011, MSU Extension professionals (244.7 total FTE) carried out 93,671 educational activities with a total of 3,634,744 contacts.

In 2011, the U.S. Census estimated Mississippi to have approximately three million citizens. The population demographics in Mississippi pose unique challenges with a wide range of diversity including both the agricultural and human sectors. In addition to it's traditional programming for Mississippi citizens in 2011, Mississippi also dealt with several natural disasters and was able to assist with recovery efforts. Further, significant work was undertaken during FY 2011 to refine state plans, refine our NIFA priority program areas and create new strategic plans.

Several grant-funded projects enabled MSU Extension to increase actual professional FTEs over our projected number. Two examples are the Mississippi Child Research and Referral Centers, and the Mississippi Extension Broadband Education and Adoption Team.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	210.0	0.0	53.0	0.0
Actual	244.7	0.0	66.3	0.0

II. Merit Review Process

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

- Internal University Panel
- External 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. Research projects by MAFES scientists are conducted under an approved CRIS project which is reviewed internally at two administrative levels then externally through the CRIS approval process. MAFES annually sponsors several internally competitive RFPS. An RFP is released describing research priorities, format, and evaluation criteria. Submitted proposals are reviewed by an internal/external panel based on objective criteria, ranked, and select proposals funded with a 25-45% success rate.

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 one external review process worked is provided below:

In 2011, the Wildlife and Fisheries Extension Program at Mississippi State University underwent an external review. The review panel consisted of five Wildlife Specialists from other universities. The team consisted of team leader Dr. Scott Craven (University of Wisconsin), Dr. Billy Higginbotham (Texas AgriLife Extension Service), Dr. David Drake (University of Wisconsin), Dr. Gary San Julian (Pennsylvania State University), and Dr. Greg Yarrow (Clemson University). This program was last reviewed as a part of a CSREES Department Review in 2004. The review team considered progress towards recommendations from that 2004 review, as well as other current issues. The team met with faculty, staff, and Extension administration. The team identified strengths, weakness, and recommendations around four focal areas: 1) Programmatic Issues, 2) Agency Cooperation/Coordination, 3) Institutional Issues, and 4) Response to Department of Wildlife and Fisheries Questions.

In general, the team was very impressed with the breadth, strength and level of engagement of the MSU Extension program. The team cited strengths in the Wildlife and Fisheries Extension program, such as supportive college administration, a flagship Natural Resources Enterprise program, cooperating agencies strongly support the program, adequate office space, allocation of a portion of RREA competitive grants, and a trend towards proactive programming. The team identified weaknesses of the total program (which included those regarding MSU policies, such as vehicle usage). Examples included a need to improve intergenerational summer programs, improve quantitative data in curriculum, conduct regular meetings between Extension fisheries program and MDWFP- Bureau of Fisheries, and a lack of promotion and tenure structure necessary to maintain quality faculty and associates. Thirty-one recommendations and comments were offered by the team. These included, for example, developing more summer youth programs, increasing fee-based programming, and creating an external advisory comittee for the Extension program.

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
- Survey of selected individuals from the general public

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 Extension 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 Extension professional 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.

MAFES and MSU-ES administration meet annually with state-specific commodity boards representing corn, soybean, cotton, rice, and peanut producers. Annual commodity board meetings help to understand producer requirements, establish research priorities, and communicate research

outcomes. MAFES assists commodity board in developing RFPs and managing submission and review processes.

Research and Extension Center Advisory Councils:
MSU has four area Research and Extension Centers (Delta, Northeast, Central, and Coastal) jointly administered by MSU Extension 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 Extension 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 Extension and MAFES (described in the previous section). Advisory committees are required to be reflective of the population of potential clientele. The process began with county extension personnel identifying stakeholders, along with promotion of the meetings to the general public for their participation. This local and community-based approach to identifying stakeholders and assessing needs allows a wide diversity in program planning as required to meet a large variety of needs expressed. In addition, in 2011, MSU Extension administrators travelled through the state extensively to gain input and hear a diverse set of concerns about Extension programming and proposed changes within MSU Extension. This included sessions with internal groups, as well as the general public and external producer advisory committees such as Delta Council, Mississippi Farm Bureau, and several commodity promotion boards.

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 nontraditional groups are an on-going part of the needs assessment process conducted by MSU Extension and MAFES. Surveys of traditional stakeholder groups and non-traditional groups and individuals were conducted in specific situations.

As one example, for the past 56 years, the Northeast Mississippi Research and Extension Center has held an annual Producers Advisory Council meeting. At this meeting, 15 Commodity Committees develop and offer a list of 3-5 recommendations for MSU Extension and MAFES to address with Extension/outreach and research activities. In 2011, 200 producers from 27 North MS counties attended this meeting, along with another 150 industry and MSU personnel. A few examples of the 45 different recommendations from the commodity committees include (from Ornamentals) a request for more publications concerning heirloom roses and all aspects of care, and (from Forestry) a request for information regarding the pros and cons of wood construction vs "green" construction using steel.

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

Each of our programs gain information from stakeholders that is, in turn, used to guide programming and effort.

As an example, forestry is a 17.4 billion dollar industry in Mississippi. While the economic contribution of forestry at the state level is well documented, information on the importance of forestry to Mississippi counties is not readily available. Many county-level forestry associations requested information to support and promote forestry in their respective counties. To meet this need, a new publication series was produced and published for each Mississippi county in 2011. Information is provided on the number of jobs and the dollar value of total output, value added, and wages and salaries within each county that are a result of economic activity by the forestry and forest products industry. Also included is information on the number of forested acres, forestland owners, and forestry related tax collections for each county.

As another example, Mississippi ranks 12th in the nation for having the highest number of ATV related injuries and fatalities. This number was especially high among youth 16 years of age and younger. Mississippi 4-H offered a 4.5 hour interactive RiderCourse throughout the state. A permanent ATV Safety Training facility has been developed on the property owned by the 4-H

Foundation of Mississippi, Inc. in the West Point area. In July 2011, a new Mississippi law passed that required youth 16 years old and younger to participate in an ATV Safety Course if they plan to operate the ATV unit on public lands. MSU Extension was noted in the bill as being one of the experts in the area of ATV Safety that the public could call on for training.

One final example: Mississippi is the third largest sweetpotato producer in the United States after California and North Carolina (USDA National Agricultural Statistics Service, 2009). Sweetpotatoes are grown on about 21,000 ac and were valued at $74,880,000 in 2010. Starting in 2008 an unknown rot began appearing in stored roots, when external symptoms were apparently not expressed at harvest. The new rot disease occurs in conjunction with the normal rots complex, and together is causing substantial economic losses. For example, in 2008 more than 14% of the stored Mississippi crop has been lost due to rotting of the roots representing 1,334,313 boxes of sweetpotatoes or- $16,775,000 for the 2008 production year and has continued in subsequent years. In response to grower concerns, MAFES scientists initiated a 3-year field and greenhouse study to isolate and identify causal pathogens and develop preventative production practices. Initial outcomes point to a disease complex involving multiple pathogenic agents.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
6848278	0	4870377	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	6848278	0	4434478	0
Actual Matching	6848278	0	4525863	0
Actual All Other	0	0	25303159	0
Total Actual Expended	13696556	0	34263500	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	0	0	1586259	0

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Global Food Security & Hunger - Agronomic Crops
2	Global Food Security & Hunger - Animal Production
3	Animal Protection
4	Global Food Security & Hunger - Aquaculture Production
5	Aquaculture Health
6	Forestry
7	Horticulture
8	Nutrient Management/Water Quality
9	Poultry
10	Wildlife and Fisheries
11	Early Care and Education
12	Family Resource Management
13	Human Health
14	Human Nutrition
15	Family Leadership Development
16	Family Life
17	Integrated Pest Management
18	Agribusiness/Risk Farm Management
19	4-H Youth Development
20	Enterprise and Community Development
21	Childhood Obesity
22	Food Safety
23	Climate Change
24	Sustainable Energy
25	Global Food Security and Hunger (not used FY11 Report)

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Global Food Security & Hunger - Agronomic Crops

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%		4%	
111	Conservation and Efficient Use of Water	15%		4%	
132	Weather and Climate	5%		0%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		10%	
202	Plant Genetic Resources	5%		2%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	10%		10%	
204	Plant Product Quality and Utility (Preharvest)	30%		13%	
205	Plant Management Systems	0%		24%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		6%	
212	Pathogens and Nematodes Affecting Plants	5%		17%	
213	Weeds Affecting Plants	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	18.0	0.0	27.6	0.0
Actual Paid Professional	17.8	0.0	18.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
497488	0	1878359	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
497488	0	1059206	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	6368574	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.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU Extension faculty also serves on Communities of Practice where possible. For example, our cotton specialist serves on the Cotton eXtension community of practice.

Overall, we have 241 employee eXtension users at Mississippi State University, with 23 new registrations in FY 2011. Our employees submitted 85 'Ask an Expert' questions and resolved 94 'Ask an Expert' questions in FY 2011.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	56908	181390	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 3

Patents listed

Patent App: Fluorescence Hyperspectral System and Method for Detection of Aflatoxin in Corn
PVP: (P-162) Clearfield Rice Development
PVP: Rex (Rice Species comprising Oryza sativa L., Poaceae al. Gramineace)

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	3	125	128

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	39716

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	Actual
2011	5083

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Industry seed companies regularly evaluate their products and test them relative to competitive genetics to improve marketability. While this method may generate information useful for contrasting relative performance within one company's genetics, comparisons to competitive genetics are limited. There is also considerable incentive for each company to conduct and represent such evaluations in a partial manner to enhance marketability. Thus, although industry-generated genetic information is readily available, its value for growers is minimal.

What has been done
Mississippi State University Variety/Hybrid Trials conduct annual, open, scientific-based, third-party evaluations of genetic performance of seed entries representing any company. Extension crop specialists analyze results to develop summaries of superior-yielding genetics for cropping cultures in Mississippi, which are published and distributed to growers. These elite genetics may participate in Extension Crop Demonstration Programs that supplement trials to assess genetic performance by evaluating plant characteristics and responses in fields.

Results
Variety Trials and genetic evaluations enhance knowledge of Extension specialists, county agents, crop producers, crop consultants and private industry by delivering findings through newsletters, meetings, invited presentations, and short courses. Using superior genetics improved 2011 value of soybeans (2.5 bu/a)($11.78/bu)(1.8m acres)=$53 million; Corn (14.2 bu/a)($6.19/bu)(0.81m acres)=$71 million; Cotton (56 lb/a)($1.00/lb)(630,000 acres)=$35 million; Wheat (5.0 bu/a)($6.89/bu)(0.360m acres)=$12.4 million. This increased raw value of these agronomic commodities over $171 million in Mississippi in 2011. Utilization of improved genetics often improves product quality, increases production efficiency, and reduces production input expenses. This resulted in at least $20 million additional benefit for producers.

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	Actual
2011	6355

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Increased growth in processing and nutrition conscious consumers are fueling the sweet potato industry. With 34% percent increase in domestic per capita consumption in the last decade, sweet potato yields exceeded two billion pounds in 2010. However, variable yields, 350-900 bushels/acre, attributable to weather and damages caused by herbicides, and rising production costs exceeding $4,000 per acre, have cut profits of many producers. Sweet potato storage root initiation and subsequent growth are sensitive to abiotic stresses and weed control chemicals.

What has been done
Two experiments were conducted using sunlit plant growth chamber facility where temperature and drought stresses were varied systematically and independently. Temperature at the

beginning of planting did not affect total or storage roots formed. Time to reach 50% of storage roots formed, and size and quality of the storage roots were significantly affected by temperature. Vine lengths, weights of total and storage roots, and total and storage root numbers declined significantly and linearly with soil moisture levels.

Results
The data obtained and functional algorithms developed using these studies can be used in management decisions such planting and irrigation scheduling in the field to optimize yield. This will benefit the sweet potato industry by providing critical information that can be used to make management decisions that will promote maximum plant growth and root development at the appropriate physiological stage of the plant's life cycle. A more abundant supply of sweet potato roots will not only supply the fresh market, but it will also minimize risk associated with the current fluctuation in supply of jumbo grade roots to the food processor and specialty market that is increasing due to consumer demand.

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	Actual
2011	3177

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Corn earworm populations were extremely high in Mississippi soybeans in 2011. Traditionally corn earworms were easily controlled with cheap pyrethroid insecticides. However, in 2011 about

80% of the fields treated with pyrethroids resulted in a field control failure.

What has been done
Mississippi State University and USDA-Agricultural Research Service have been working together to document tolerance to the pyrethroid class of chemistry in corn earworms. Also, as soon as the first control failures were being reported, Mississippi State University Extension Service posted to articles to the Mississippi Crops Situation Blog and published several popular press articles warning growers to switch modes of action.

Results
After evidence of tolerance to pyrethroids in corn earworms, producers switched to other products to control them in soybeans. Mississippi reported 750,000 acres treated 1.9 times for corn earworms in 2011 (1,425,000 acres). Average cost of pyrethroid plus application is $9.00/acre. Approximately 50,000 acres were treated before word got out to no longer use pyrethroids. If only 60% (825,000 acres) of those acres were treated with a pyrethroid that failed, growers would have wasted $7,425,000. Since corn earworms were tolerant, control was not adequate. With state average yield of 38 bu/a, and $12 price, a very conservative estimate of 10% yield loss would have resulted in a $37,620,000 loss in revenue. Extension communicating correct and timely recommendations saved Mississippi soybean growers $45,045,000.

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
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

Year	Actual
2011	2859

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Nutrient Use Efficiency and Forage Production Program helps producers improve fertility and better manage hay and pasture production. In Mississippi, over 70% of the forage producers do not soil test, over 80% of the hay fields and pastures are potassium deficient and over 50% of the hay fields have less than optimum pH for forage production.

What has been done
The program works to refine current fertility recommendations for forage producers, educates on the importance of soil testing and fertility recommendations available for forage production systems, and tests fertilizer sources and management practices that could improve forage production and quality and increase profitability. Replicated field research with different fertilizer sources and management strategies, field demonstrations, and technology transfer were implemented. Information was provided at cattlemen's meetings, grazing schools, and through newsletters.

Results
Data was collected from replicated trials and summarized on newsletters and poster presentations at commodity advisory meetings. Over 330 producers observed the impact of different fertility management practices at a grazing school as well as two field days in 2011. The evaluation of fertilizer sources and new production technologies included different nitrogen sources and bio stimulants in a production setting as well as in research setting to increase profitability. During the production phase, work was conducted very closely with forage and livestock producers on their farms to follow nutrient applications and monitor changes in forage production.

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
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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the four impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Global Food Security & Hunger - Animal Production

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
205	Plant Management Systems	0%		5%	
301	Reproductive Performance of Animals	15%		12%	
302	Nutrient Utilization in Animals	20%		9%	
303	Genetic Improvement of Animals	20%		2%	
304	Animal Genome	5%		12%	
305	Animal Physiological Processes	10%		12%	
306	Environmental Stress in Animals	10%		5%	
307	Animal Management Systems	15%		18%	
308	Improved Animal Products (Before Harvest)	5%		0%	
311	Animal Diseases	0%		6%	
315	Animal Welfare/Well-Being and Protection	0%		2%	
502	New and Improved Food Products	0%		4%	
511	New and Improved Non-Food Products and Processes	0%		13%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	14.0	0.0	4.8	0.0
Actual Paid Professional	12.7	0.0	10.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
355318	0	1166956	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
355318	0	1456651	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	2235878	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 sizes of typical dairy operations
- Producer Workshops on 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.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU Extension faculty also serves on Communities of Practice where possible. For example, our beef cattle specialist serves on the Cotton eXtension

community of practice.

Overall, we have 241 employee eXtension users at Mississippi State University, with 23 new registrations in FY 2011. Our employees submitted 85 'Ask an Expert' questions and resolved 94 'Ask an Expert' questions in FY 2011.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	55809	94046	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 1

Patents listed

Patent app: Production of Xylo-Oligosaccharides Using Autohydrolysis of Fiber Separated by Elusieve Processing of Animal Feeds

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	8	77	85

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	24976

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	Actual
2011	4995

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Beef cattle producer input from advisory meetings, program evaluations, and personal contacts indicates a need for organized feeder calf marketing efforts on a statewide basis. Producers recognize that to improve profitability, marketing programs must capture value-added management. This is particularly important in the current period of high input prices and other challenges to profitability.

What has been done
Mississippi State University Extension Service Beef Cattle Specialists and Area Livestock Agents have successfully established a new marketing option for feeder cattle across the state. These board sales have been successful in bringing together cattle producers and livestock marketers to improve the profitability of multiple sectors of the beef production chain. This type of marketing option is extremely efficient for all the parties involved. At least two annual sales are currently held in Mississippi, and producer participation is expanding.

Results
Since 2008, more than 14,900 head of cattle in 236 truckload lots have been marketed in these board sales. Together, the receipts from these sales exceeded $10.6 million. For over 80% of the cattle in these sales to date, price premiums were achieved above Mississippi average market prices when the cattle were loaded out. If even half of the home-raised calves in Mississippi are marketed in this manner, it would return more than $18.6 million annually back to the cow-calf producers and leave more revenue from these transactions in the state.

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	Actual
2011	2118

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Area beef producers struggle each summer in controlling horn flies on their cattle. Severe infestations have been experienced in the beef herds in this area over the past few years due to dry weather conditions. Producers were experiencing reduced weaning weights and milk production due to the blood loss and irritation caused by these pests. An effective season-long horn fly control program had eluded producers up to that point.

What has been done
Mississippi State University Extension Service worked with County Directors in 4 counties to hold a Multi-County Cattlemen's Exchange Meeting to address this issue. A program was presented on the best methods available to beef producers to control horn flies in their herds. Mississippi State University Extension Service worked with producers in developing a control program that combined a pour-on insecticide with an insecticide-impregnated ear tag to get season-long control of horn flies in their beef herds.

Results

As a result of this program and farm demonstrations that followed, area beef producers were trained on the importance of controlling horn flies on their beef herds. Every producer in attendance, along with several others that heard about the program from those in attendance, implemented the horn fly control measures they learned. By using this control program, producers should realize a 10:1 return on investment and see increased weaning weights of between 40-65 pounds per head. At the then current market price of $1.30 per pound on 500 pound steers, producers should see an increase in income of $52.00 - $84.50 per head. With an estimated 5,000 head of cattle implementing the program, an increase in total income of between $260,000 and $422,500 should be realized as a direct result of this program.

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	Actual
2011	1998

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Nutrition-related costs are the largest cash expense in Mississippi beef cattle production operations. On average, well over half of the variable costs in cow-calf or stocker operations are attributed to cattle nutrition programs. Input costs are historically high and straining operational profitability.

What has been done
Beef cattle Extension programming emphasizes producer education in forage-based cattle production and appropriate use commodity-based feedstuffs in these systems. One-fourth of Mississippi Master Cattle Producer educational materials are devoted to these topics. County cattlemen's association meetings, in-service trainings, field days, statewide producer meetings, short courses, Extension publications, newsletters, e-mails, popular press articles, MSUcares beef cattle website, radio, and television are dissemination methods used.

Results
Impacts of increased information development and dissemination on the utilization of forage-based cattle production systems and co-product feedstuffs have been shown to reduce beef cattle operational input costs by 15% without sacrificing production. If half of the cow-calf and stocker operations in Mississippi were produced at this more efficient cost level, then in excess of $43 million would be retained statewide on an annual basis.

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
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

Year	Actual
2011	1878

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Producers in Mississippi need more information on the components of year-round forage systems for beef cattle production. Forages are generally the cheapest feed source available to livestock and thus are central to successful livestock production. Native warm season grasses hold promise as a component of grazing systems, but empirical data from this region is limited.

What has been done
The Prairie Research Unit is evaluating the ability of native warm season grasses to be incorporated into sustainable forage systems to improve forage-fed beef production while providing ecosystem services. Forages were planted in 2009. Grazing began in May 2011 with 225 beef steers allotted to 1 of 3 summer forage treatments. Cattle grazed for 110 days. Weight was recorded every 28 days, and behavior was recorded by activity monitors. Some steers were then sent to a commercial feedlot while the rest remain forage-fed.

Results
Cattle performance data from the summer 2011 grazing season indicate that average daily gain (ADG) of steers did not differ between treatments during periods; day 1-28, 56-84, or 84-110. However, during the peak of the season (days 28-56), ADG was greater in Indiangrass and Big Bluestem, Little Bluestem, and Indiangrass mixed sward than in Bermudagrass. Percent of the day that animals spent grazing, lying down, or standing still did not differ within period or overall. Time spent walking did differ between treatments. The performance data indicates that native warm season grasses show promise for use in beef grazing systems in Mississippi.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the four impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 3

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
311	Animal Diseases	40%		0%	
312	External Parasites and Pests of Animals	10%		0%	
313	Internal Parasites in Animals	10%		0%	
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	10%		0%	
315	Animal Welfare/Well-Being and Protection	30%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	0.5	0.0	1.0	0.0
Actual Paid Professional	0.4	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
12514	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
12514	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 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
- 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.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2431	2387	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	803

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	Actual
2011	161

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The seedstock segment of beef production in Mississippi is shrinking due to profitability challenges. In addition, many commercial cow-calf producers go outside the state to purchase herd sires and replacement heifers. Some other producers purchase low genetic value herd sires and hurt their own profitability and the reputation of Mississippi cattle by doing so.

What has been done
The Mississippi State University Extension Service in cooperation with the Mississippi Beef Cattle Improvement Association are addressing this problem via a wide variety of bull and heifer development programs, bull and heifer marketing programs, genetic improvement educational offerings, and advertising and promotion efforts.

Results
Mississippi Beef Cattle Improvement Association seedstock sales have demonstrated an increased value in Mississippi bulls by nearly $500 per head. Demand for herd sires is increasing due to educational and promotional efforts of Mississippi State University Extension Service and beef commodity groups. If half of these herd sires were supplied from Mississippi operations implementing genetic improvement efforts based on Extension information, the added value of this seedstock would contribute nearly $1.2 million in increased returns annually to Mississippi-based bull suppliers. The increase in value of production from use of improved genetics in commercial cattle herds would be substantial and carry over as replacement heifers with these genetics are retained.

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	Actual
2011	128

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi dairy producers are committed to being good stewards of their cattle and natural resources in efforts to produce high quality milk and dairy products for consumers and to generate profits for their families and employees. Mastitis infections in dairy cattle lower milk quality (elevated Somatic Cell Counts-SCC) and reduce producer profits. The 27 European Union (EU) countries have a SCC limit of 400,000 cells/ml; which mandates that milk from US farms be monitored to ensure eligibility for export to the EU.

What has been done
Mississippi State University Extension Service conducted educational activities in FY 2011 to help dairy producers understand how current EU SCC standards and proposed reductions in the US regulatory SCC limit are very important issues that warrant full attention to maintaining udder health and low SCCs in their herds. These educational activities included two "Milk Quality Workshops" and in-depth discussions of "Lowering SCCs to Improve Milk Quality, Udder Health, and Profitability" during Mississippi State University Dairy Field Days.

Results
Many dairy producers have expressed appreciation for having these educational programs devoted to helping them learn more about management practices to improve udder health and

milk quality. The knowledge producers gained through these educational efforts and their subsequent changes in management practices has lowered SCCs on their farms, improved milk quality and udder health, and prevented loss of milk production. It is estimated that Mississippi dairy producers were able to prevent lost milk sales in excess of $2,992,000.00 in 2011 simply by lowering SCCs in their herds.

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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the two impact statements offered in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Global Food Security & Hunger - Aquaculture Production

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	0%		2%	
302	Nutrient Utilization in Animals	50%		2%	
306	Environmental Stress in Animals	15%		0%	
307	Animal Management Systems	10%		81%	
308	Improved Animal Products (Before Harvest)	25%		5%	
312	External Parasites and Pests of Animals	0%		4%	
402	Engineering Systems and Equipment	0%		4%	
903	Communication, Education, and Information Delivery	0%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	2.0	0.0	5.0	0.0
Actual Paid Professional	0.2	0.0	6.4	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
6364	0	35092	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
6364	0	24179	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	4841284	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.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1235	95	0	0

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

Patent Applications Submitted

Year: 2011
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	1	3	4

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	222

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	Actual
2011	44

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi's commercial catfish acreage has dropped dramatically in the last three years, due largely to competition from cheap foreign imports. In 2009, the USDA Foreign Agricultural Service ruled that US catfish farmers had been adversely affected by imports of Vietnamese basa and tra fish and were eligible for benefits under the Trade Adjustment Assistance for Farmers program. Thus catfish farmers were eligible for cash payments and free technical training to assist in developing and implementing business adjustment plans.

What has been done
Mississippi State University Extension Service developed and delivered 12 hours of programming for farmers in four lectures. The first explained the purpose, requirements, and deadlines for the Trade Adjustment Assistance for Farmers program. The second was a 4.5-hour session, "Improving the Production Efficiency of Catfish Operations." The third was a 4.5-hour session, "Alternative Enterprises for Catfish Operations." The fourth introduced business planning basics and assisted participants in completing the initial business plan.

Results
Almost 14,000 hours of instruction were taken by a total of 1,074 participants from Mississippi and five additional states. As of January 31, 2012, 83% of Mississippi?s eligible applicants have completed Phase Three of the program and have received $4,000 while 36% have completed Phase Four of the program and have received $8,000. To date, $2,384,000 in cash payments have been received by Mississippi applicants and $2,080,000 in cash payments are pending. Fifty-two Mississippi applicants are still working with Mississippi State University Extension Service to complete their requirements.

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	Actual
2011	35

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The closures of significant portions of the Gulf of Mexico federal and Mississippi state waters to commercial and recreational fishing due to the Deepwater Horizon oil spill altered the production and consumption decisions of residents and tourists in affected communities. The changes in the market perceptions and flow of goods and services generated by the damaged natural resources affected not only households but also the seafood producers and service providers dependent on these natural resources.

What has been done
MarketMaker provides a web-based tool that enables affected producers to recover local and domestic markets of products/services adversely affected by the oil spill. Mississippi State University Extension Service conducted four MarketMaker trainings for seafood regulators, dealers and processors, and research/Extension faculty and staff. Flyers on how to integrate MarketMaker in marketing seafood products and services were disseminated to licensed charter boats for-hire, seafood dealers, and commercial shrimp and hook and line fishermen.

Results
By registering in Marketmaker, Mississippi seafood producers gained access to the local markets in the state, as well as the markets in all 20 member states. The number of Mississippi

MarketMaker users increased from about 3,110 users per month from January to June 2011 to 3,661 users per month from July to December 2011. More than 3,000 Mississippi MarketMaker users represent a potential market for seafood products and services produced by Mississippi.

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	Actual
2011	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Catfish producers and processors as well as other related enterprises will be directly affected by the proposed rules to put the catfish industry under USDA-Food Safety and Inspection Service regulation instead of FDA who currently regulates this industry. Many changes in production, processing, records, production programs, and reporting systems will be different for the entire industry under this new proposed system.

What has been done
Upon official release for comment of the proposed rule, Catfish Farmers of America and The Catfish Institute asked for a team of experts to review the proposal, formulate a scientific written response to the proposed rules, and summarize and present the issues to the entire catfish/aquaculture industry. Mississippi State University Extension Service developed a presentation to the industry group of the foreseen changes/issues/concerns with the proposed regulations in relation to product processing, handling, labeling, and records.

Results
On May 4, 2011 a daylong meeting/seminar with presentations and discussion from each specialist on their particular area of expertise was presented to approximately 55 industry representatives. An extensive presentation with discussion was held concerning the processing aspects of the proposal and the impact it would have. These proposed regulations will impact the entire catfish and fresh water aquaculture industry across the US and foreign countries exporting catfish to the US. This training and informational seminar was led by Mississippi State University Extension Service specialists within the foods discipline.

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

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the three impact statements offered in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

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%		0%	
312	External Parasites and Pests of Animals	15%		0%	
313	Internal Parasites in Animals	15%		0%	
315	Animal Welfare/Well-Being and Protection	35%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	0.4	0.0	0.7	0.0
Actual Paid Professional	0.0	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
767	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
767	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

• 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.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	135	0	0	0

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

Patent Applications Submitted

Year: 2011
Actual: 1

Patents listed
Patent App: Oral Delivery of Attenuated Edwardsiella ictaluri Vaccines

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	23

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	Actual
2011	5

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

Year	Actual
2011	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Enteric septicemia of catfish, or ESC is caused by the bacterial pathogen Edwardsiella ictaluri and is a significant disease of farm-raised catfish. ESC occurs in an acute form that causes bacterial septicemia, which rapidly leads to death, and a chronic form that causes a characteristic head lesion that also may proceed to septicemia and death. ESC only occurs in channel catfish and is the most prevalent disease affecting the channel catfish aquaculture industry. To date, commercially available vaccines have been relatively ineffective in controlling ESC.

What has been done
Beginning in 2008, MAFES scientists began work on an alternative oral-delivery vaccine for ESC. They developed an attenuated vaccine from a wild-strain isolate, stabilized it for oral delivery, conducted lab efficacy and safety testing, developed a delivery system and conducted small-pond field efficacy tests at 0.1 ac pond scale. Given initial positive results in lab and small scale pond trials, in 2010, we scaled field tests up to 1.0 ac pond-scale feasibility trials. In 2011, they refined protocols to improve cell viability, dilution rates, and vaccine production processes and repeated 1.0 ac trials in 16 ponds.

Results
In 2011 1.0 scale trials, the vaccine increased feed consumption by 29.6%, number of fish at harvest by 81.2%, size at harvest by 23.8%, total harvest weight by 125,5%, enhanced feed conversion rate by 44.1%, and reduced feed costs/lb of fish by 42.6%. Vaccine production is being scaled up in preparation for 2012/2013 commercial-scale trials, an improved delivery system is being developed, patent applications have been filed, and USDA approval and licensing is being sought. Although the vaccine is several years from release, all trials to date indicate that this approach is safe, efficacious, and cost-effective and will have significant economic outcomes for catfish producers.

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

This is one of the many existing Planned Programs that we intend to consolidate in the 2013 Plan of Work.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Forestry

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	0%		11%	
122	Management and Control of Forest and Range Fires	20%		0%	
123	Management and Sustainability of Forest Resources	45%		0%	
124	Urban Forestry	10%		0%	
125	Agroforestry	15%		0%	
133	Pollution Prevention and Mitigation	10%		0%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		15%	
211	Insects, Mites, and Other Arthropods Affecting Plants	0%		59%	
304	Animal Genome	0%		11%	
402	Engineering Systems and Equipment	0%		2%	
511	New and Improved Non-Food Products and Processes	0%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	13.0	0.0	0.9	0.0
Actual Paid Professional	13.3	0.0	1.2	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
370831	0	78867	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
370831	0	19222	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	384245	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.

3. How was eXtension used?

The forestry resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU has 80 employees that serve on one of the 59 Communities of Practice.

Overall, we have 241 employee eXtension users at Mississippi State University, with 23 new registrations in FY 2011. Our employees submitted 85 'Ask an Expert' questions and resolved 94 'Ask an Expert' questions in FY 2011.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	51732	58067	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	64	39	103

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	18300

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	Actual
2011	3660

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The southern pine beetle has been damaging pine forests in Mississippi for hundreds, if not thousands of years. Many landowners have suffered losses and have even lost entire stands. Such widespread damage has grasped the public's attention in a manner unlike any other forestry issue in the south. Only proactive management activities, such as periodic thinnings, can increase overall forest health and reduce the threat of a southern pine beetle outbreak.

What has been done
Funds have been secured from the US Forest Service and Mississippi Forestry Commission to conduct the Mississippi Southern Pine Beetle Prevention Program. In FY 2011, these funds were earmarked for Mississippi State University Extension Service forestry education programs in all areas dealing with southern pine beetle prevention. Funds were also used for landowner, logger, and forester cost share programs.

Results
In FY 2011, 55 educational programs were conducted statewide for nearly 1,400 participants dealing with all areas of southern pine beetle prevention. In addition, nearly $250,000 in logger cost shares, $200,000 in forester cost shares, and $75,000 in landowner cost share payments were made. The end result of this is 82,000 new acres of forest land with approved forest stewardship plans, and 8,000 acres of forest land thinned.

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	Actual
2011	2928

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi State University Extension Service Forestry plays a vital role in influencing family forest landowners to engage in sustainable resource management that balances economic objectives with environmental quality. However, a very small proportion of the population has not participated in educational programs and is not realizing the full benefit of their forest land. Forest owners with small- to mid-sized tracts of land are more likely than their counterparts to lack knowledge about forest management.

What has been done
A short course has been offered that serves as a primer for family forest owners to learn about forest management with an emphasis on management succession. The curriculum is drawn from short courses provided by Mississippi State University Extension Service and a 13-chapter Extension publication entitled Managing the Family Forest in Mississippi. The program provides landowners with tools and information to assist them in decisions about their forestland and attracts clients who have traditionally not participated in Extension forestry outreach.

Results
In total, 602 individuals from 59 counties attended 13 programs. Over 10% of participants were African American while nearly 10% were from other states (absentee landowners). These are higher numbers of nontraditional stakeholders than those represented in other forestry programs. Participants reportedly owned a total of 206,730 acres or an average of 15,902 acres. The

perceived value of the programs together totaled $2,732,435 in earnings or savings for participants' forestlands. Hosted by county forestry associations, the programs encouraged many landowners to become members in their local county forestry associations. Results from the programs have been submitted to the Journal of Extension.

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	Actual
2011	1464

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Over the last three decades, forested acreage has increased dramatically in the Lower Mississippi Alluvial Valley. Often, landowners in the Lower Mississippi Alluvial Valley are accustomed to agricultural land use, but have little to no experience or understanding of forest management. The result is unmanaged or improperly managed woodlands that are unable to reach their full potential in terms of timber production, wildlife habitat, and ecosystem functions.

What has been done
Mississippi State University Extension Service provided a series of educational programs in the Lower Mississippi Alluvial Valley. The programs introduced stakeholders to fundamentals of bottomland hardwood and wildlife habitat management, alternative forest enterprises, conservation practices, and federal landowner assistance programs. Ten focus groups were conducted in Mississippi as follow-up to the programs with the goal of identifies further opportunities to work with landowners on forest management issues.

Results

Eight workshops and 247 participant evaluations indicated that nine out of ten participants found the courses to be very useful. Also, participants indicated a knowledge level increase, on a 5 point scale, from a low of 2.8 to a high of 4.5. Participants valued the programs at a total of $25,950 when considering the cost of attending a similar, privately sponsored program. Landowners represented almost 44,000 forested acres and nearly 30% were cost share recipients. Future topics of interest to landowners included forest certification, hunting leases, and tree identification. Results from the programs will be submitted to the Journal of National Association of County Agricultural Agents.

4. Associated Knowledge Areas

KA Code	Knowledge Area
122	Management and Control of Forest and Range Fires
133	Pollution Prevention and Mitigation

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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the three forestry impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Horticulture

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	15%		4%	
202	Plant Genetic Resources	0%		4%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		4%	
204	Plant Product Quality and Utility (Preharvest)	15%		6%	
205	Plant Management Systems	60%		67%	
206	Basic Plant Biology	0%		3%	
601	Economics of Agricultural Production and Farm Management	10%		6%	
903	Communication, Education, and Information Delivery	0%		6%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	20.0	0.0	3.5	0.0
Actual Paid Professional	20.4	0.0	5.8	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
570349	0	219471	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
570349	0	522425	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	1058528	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.
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 thevegetable and fruit production, turf, floriculture, and ornamental nursery industries.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU has 80 employees that serve on one of the 59 Communities of Practice. One of our Horticulture Specialists is the leader of the Ornamental Horticulture COP, and is joined by several MSU county agents and Master Gardener volunteers.

Overall, we have 241employee eXtension usersat Mississippi State University, with 23 new registrations in FY 2011. Our employees submitted 85 'Ask an Expert' questions and resolved 94 'Ask an Expert' questions in FY 2011.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	116507	160978	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 4

Patents listed

Patent app: MSB-04-264 Experimental Bermudagrass
PVP: Crapemyrtle Plant Names 'Chocolate Mocha'
PVP: St. Augustinegrass Plant Names 'MSA 2-3-98'
PVP: St. Augustinegrass Plant Names 'MSA-31'

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	3	7	10

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	46248

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	Actual
2011	9250

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Small vegetable growers want to include high tunnels in their vegetable production system to extend their market windows earlier in the spring and later in the fall. If they could successfully do this, they could higher prices for their crop since it would be available when supplies were lower.

What has been done
Mississippi State University Extension Service worked with several growers in Clarke County with their high tunnels with recommendations on planting times and varieties of vegetables, primarily tomatoes, to grow.

Results
Through the selection of early tomato varieties, early season production was advanced by 3 - 4 weeks ahead of outdoor production. Sweet and hot peppers, eggplant, squash, and cucumber production was advanced by about 3 weeks. In one case, fall production of tomatoes was extended into late November.

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	Actual
2011	7400

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There are numerous fruit and vegetable producers in the Northeast District of Mississippi. These producers farm a variety of produce for their local markets, providing fresh fruit and vegetables for citizens. This allows Mississippians an opportunity to buy healthy, locally grown food. These producers made known a desire for horticulture education without having to travel to south Mississippi to receive it.

What has been done
Mississippi State University Extension Service held a day-long conference in February 2011 to meet this need. Numerous Extension professionals assisted by speaking throughout the day on a variety of horticulture production areas. The morning session was for all participants together as a group, while the afternoon session held separate meetings for fruit and for vegetable producers to better meet their needs.

Results
123 participants from 4 states attended the conference. Farmers came from large and small farms both. The estimated farm income ranged from a total of $150,000 to $230,000+. The estimated conference value to producers was $24,000. The event received high evaluation marks in each area and was heavily requested to continue this conference.

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	Actual
2011	3700

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The city of Natchez is blessed to be the oldest settlement on the Mississippi River. The city is filled with antebellum homes and landscapes as well as public parks and recreational areas. County residents and elected officials have become concerned with the declining appearances of many of these public areas. Due to a lack of funding and resources, the city has turned to volunteer organizations to help make a difference. Mississippi State University Extension Service and Master Gardeners answered the call.

What has been done
The Master Gardeners arranged a community wide clean-up event for local parks in high visibility areas. They recruited local high schools, citizens, and other groups to help answer the need. Plans were made to trim 160 crape myrtle trees, remove 16 loads of debris, clean out over 300 feet of flower beds, and rake up over 60 trash bags of leaves.

Results
The event turned out to be an overwhelming success that has created multiple community clean-up days now. The local newspaper provided great coverage for the event. Over 100 volunteers showed up including a high school football team. Mississippi State University Extension Service and Master Gardener organization has since emerged as a leader in community beautification and now has a vocal position in making future plans to enhance the beauty of this majestic city.

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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the three horticultural impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 8

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%		0%	
111	Conservation and Efficient Use of Water	15%		18%	
112	Watershed Protection and Management	0%		13%	
133	Pollution Prevention and Mitigation	0%		43%	
401	Structures, Facilities, and General Purpose Farm Supplies	10%		0%	
402	Engineering Systems and Equipment	15%		3%	
403	Waste Disposal, Recycling, and Reuse	15%		0%	
404	Instrumentation and Control Systems	10%		0%	
405	Drainage and Irrigation Systems and Facilities	15%		0%	
601	Economics of Agricultural Production and Farm Management	0%		6%	
605	Natural Resource and Environmental Economics	0%		13%	
903	Communication, Education, and Information Delivery	0%		4%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	2.0	0.0	1.5	0.0
Actual Paid Professional	2.2	0.0	1.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
61774	0	312605	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
61774	0	69093	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	429393	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.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5353	4808	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	5	7

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	1694

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	Actual
2011	339

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Nutrient inputs from non-point sources, including agriculture, are significant contributors to hypoxia in the Northern Gulf of Mexico and attendant economic and ecological impacts. Comprehensive nutrient management on agricultural lands within watersheds of the Lower Mississippi Alluvial Valley (LMAV - Delta) will be essential to achieve the nutrient reductions goals established in the Gulf Hypoxia Action Plan 2008, The Gulf of Mexico Alliance Governors' Action Plan II for Healthy and Resilient Coasts, and the Draft Delta Nutrient Management Strategies plans. Barriers to achieving nutrient management goals are related to uncertainties regarding: achievable levels of nutrient reduction with BMPs and comprehensive nutrient management system; costs associated with these nutrient reductions; value and benefits to stakeholders from these reductions; and levels of nutrient reduction required to protect local and regional water bodies.

What has been done
In 2010 and 2011, MAFES scientists collaborated with Delta F.A.R.M. to implement and evaluate conservation practices on agricultural lands that would reduce nutrient loading in downstream receiving waters and ultimately the Gulf of Mexico. The Mississippi Department of Marine Resources funded this endeavor by providing $1.5 million to MSU for the purpose of better positioning resource agencies for addressing nutrient concerns. From these funds, Delta F.A.R.M. was awarded $675,000 to put conservation practices on the ground that would further goals and objectives identified by participating agencies. These funds created an opportunity for Delta F.A.R.M., Delta Wildlife and partners to leverage over $14 million additional dollars for conservation practice implementation. These practices are being implemented in a manner that is fully integrated with state and regional strategies and initiatives that promote nutrient reductions in waters flowing to the Gulf.

Results

Outcomes of this collaborative effort are illustrated with an example of one 2,000 acre cotton, corn, and soybean farm located in Humphrey's County on the banks of Tchula Lake, a large southern tributary of the Yazoo River that was selected as a priority watershed through MRBI planning efforts. This farm initially served as a project site for an MSU led project, funded through the EPA-GMPO, which proposed to implement a series of low-grade weirs in several of the agricultural drains and intensively monitor and document the resulting changes in water quality. As MDMR funds were made available, the suite of conservation practices being implemented was significantly increased. These investments further encouraged the landowner's support, as he provided over $400,000 in private funds for the project. Specifically, the project implemented: 16 low grade weirs, 17,890 feet of two-stage ditch, 52 water control structures, and land formed 433 acres. This particular suite of practices (often referred to as "controlled surface drainage") is proving to be a very effective method of reducing nutrient and sediment loads from production agricultural lands. Conservation practice implementation is currently 95% complete, but preliminary monitoring efforts show reductions in sediment loss and a 47% reduction in total inorganic phosphorus (TIP) transport. Other related projects are documenting significant nutrient reductions as soon as one year post implementation.

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	Actual

2011 271

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Row crop producers in Mississippi contributed over $2.3 billion in state revenues in 2011. Over-reliance on glyphosate-only herbicide programs has led to the evolution of resistant weed species. Glyphosate-resistant weeds require growers return to practices that resemble those employed before Roundup Ready systems. However, in many cases this transition is not feasible. To date seven weed species (horseweed, Italian ryegrass, Palmer amaranth, johnsongrass, waterhemp, giant ragweed, and goosegrass) have evolved resistance to glyphosate in Mississippi. The most troublesome of these are Palmer amaranth and Italian ryegrass. Glyphosate-resistant Palmer amaranth has been confirmed in 31 counties across Mississippi while glyphosate-resistant Italian ryegrass is present in 14 counties. Glyphosate-resistant weeds can jeopardize weed management programs. Therefore, it is important to identify effective programs for managing glyphosate-resistant Palmer amaranth and Italian ryegrass to prevent competition and yield reductions in Mississippi crops.

What has been done
Research (~4-5,000 plots) to address management of glyphosate-resistant weed species in Mississippi has been ongoing at the Delta R&E Center. This research has identified the geographic distribution of glyphosate-resistant Palmer amaranth and Italian ryegrass across the state. Results of this research have been used to formulate control programs that minimize the deleterious effects of these weeds on soybeans, cotton, corn, and rice. Information on management of resistant weeds was presented at 50 field days, production meetings, or training sessions, reaching nearly 2,500 people in 2011. Four MSU Extension Information Sheets outlining herbicide programs were published and distributed to Extension offices in all 82 counties in Mississippi. On March 9, 2011, the Delta R&E Center hosted a field day specifically addressing glyphosate-resistant Italian ryegrass, and 174 people were in attendance.

Results
Research has shown that just one Palmer amaranth/row foot can reduce soybean yields >60%. Soybean production in Mississippi was valued at over $860 million in 2011. Other row crop values included $599 million for cotton and $595 million for corn. Given the potential for yield reductions from just one of these glyphosate-resistant plants and the rapid spread of these weeds, there is a need for continued research and extension outreach on their management.

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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the two impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Poultry

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	10%		11%	
302	Nutrient Utilization in Animals	10%		60%	
303	Genetic Improvement of Animals	0%		10%	
305	Animal Physiological Processes	10%		6%	
306	Environmental Stress in Animals	10%		0%	
307	Animal Management Systems	10%		0%	
308	Improved Animal Products (Before Harvest)	10%		0%	
311	Animal Diseases	10%		13%	
312	External Parasites and Pests of Animals	10%		0%	
313	Internal Parasites in Animals	10%		0%	
315	Animal Welfare/Well-Being and Protection	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	0.0	2.0	0.0
Actual Paid Professional	1.6	0.0	2.1	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
44645	0	39850	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
44645	0	438028	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	811096	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.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1093	853	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	27	27

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	324

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number or 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 or 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	Actual
2011	65

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Meat and Poultry Processors must comply with the USDA's Pathogen Reduction and Hazard Analysis Critical Control Point (HACCP) regulation. The USDA's Pathogen Reduction and Hazard Analysis Critical Control Point (HACCP) regulation states that certain functions in the processing plant be conducted by certified personnel and/or HACCP trained individuals.

What has been done
The USDA's Pathogen Reduction and Hazard Analysis Critical Control Point (HACCP) regulation states that certain functions in the processing plant be conducted by certified personnel and/or HACCP trained individuals. Trainers in the Department of Food Science, Nutrition, and Health Promotion fulfilled the needs of the industry with their annual training course. USDA Food Safety Inspection Service personnel also assisted with the training.

Results
Thirty people from the meat and poultry processing industries in MS, AL, and TN completed the training session. Since 1998, MSU Extension specialists have trained 535 people, meeting the need of all size processing plants and related industries to comply with the federal regulations. Some processing plants continue to send additional personnel to the training.

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	Actual
2011	52

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Food safety globally is one of the most significant factors in food production. Incidence of microbial contamination of poultry meat combined with undercooking results in a significant number of the ~1.8 million incidences of illness caused by Salmonella and Campylobacter.

What has been done
Mississippi State University Extension Service is conducting research to address pre- and post-harvest control of these pathogens, in addition to Listeria monocytogenes in ready-to-eat poultry products and to determine mechanism of action of various antimicrobials against all three pathogens.

Results
Improved control of food-borne pathogens is critical to the long-term sustainability of animal protein production in a global society. More effective control mechanisms and understanding the mechanisms of action will be tremendously beneficial to the Mississippi poultry industry.

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	Actual
2011	26

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
A significant issue for the poultry industry in Mississippi is litter management and quality. As a constant in every broiler house environment, it is a potential source of disease transmission and bird welfare.

What has been done
Mississippi State University, in conjunction with the USDA Poultry Research Laboratory at MSU, is actively engaged in research to improve poultry litter management. Approaches are amendments to litter, alternative litter composition, and effects of windrowing to reduce microbial loads. Although windrowing has been shown to be beneficial, the current research indicates it is not working through the previously thought mechanisms.

Results

Development of alternative litter composition, as well as probiotic amendments, has a tremendous potential to reduce disease and improve overall health and performance of broilers produced in Mississippi.

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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the three poultry impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Wildlife and Fisheries

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
135	Aquatic and Terrestrial Wildlife	30%		12%	
136	Conservation of Biological Diversity	15%		1%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%		0%	
304	Animal Genome	0%		64%	
305	Animal Physiological Processes	0%		2%	
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	5%		0%	
601	Economics of Agricultural Production and Farm Management	0%		5%	
605	Natural Resource and Environmental Economics	30%		16%	
722	Zoonotic Diseases and Parasites Affecting Humans	5%		0%	
903	Communication, Education, and Information Delivery	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	7.0	0.0	0.5	0.0
Actual Paid Professional	10.2	0.0	2.2	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
286574	0	142385	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
286574	0	57874	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	294053	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.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	45868	36438	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	34	36

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	13718

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
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	Actual
2011	2744

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Research at Mississippi State University has shown that private landowners and producers can diversify incomes and increase conservation on their lands by developing fee-access outdoor recreational enterprises (i.e., hunting, angling, wildlife watching, other nature-based activities). Since landowner knowledge in establishing and operating these types of businesses is limited, the Natural Resource Enterprises Program at Mississippi State University designed educational workshops to train landowners and producers.

What has been done
During 2011, Natural Resource Enterprises Program held six general workshops on rural properties that included topics such as business management and marketing, legal and liability concerns, wildlife habitat management, and land conservation. Three advanced workshops focused on business plan development. A direct-mail survey was sent to all 1,200 Natural Resource Enterprises Program landowner workshop attendees of workshops conducted during 2005-2010 to assess needs of landowners to aid in developing future programming to address the needs.

Results
During 2011, approximately 325 participants were surveyed at the conclusion of the general or advanced workshop to gather satisfaction data, immediate educational impacts, and comments and topics for future workshops. On a scale of 1 to 4 (1 being poor and 4 being outstanding), attendees reported a 3.83 average for the overall program. Other survey highlights include a 3.75 average for 'Content was useful,' and a 3.87 average for 'Instructor rating.' The majority of respondents (75%) planned on implementing conservation measures on their lands after attending the workshop training event impacting approximately 370,000 acres in five states. In the post-workshop landowner survey, respondents indicated they were in need of more information

on legal and business considerations.

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.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2195

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Adams County has begun to see rapid expansion in the number of wild hogs inhabiting the area. Mississippi State University Extension Service has received complaints from landowners, cattlemen, farmers, hunting camp members, foresters, and rural residents. All constituents have expressed great concerns over the destruction and long term consequences they will have in our area.

What has been done
Mississippi State University Extension Service arranged two seminars for all of the clientele impacted by wild hog destruction. The seminars included Extension Service wildlife specialists

speaking on the biology and reproduction of hogs as well as habitat modification to reduce numbers. The Mississippi Department of Wildlife, Fisheries, and Parks also attended the meeting to discuss the legal issues relating to wild hog removal and control practices.

Results
The problem with the wild hog population continues, however, multiple hunting clubs are now working together on removal using multiple options primarily dogs, shooting, and trapping. These efforts have also helped in forestry areas as well as in many rural parts of Adams County. We are currently in the process setting up a research project to determine ways to maximize trapping by using hormones with females and other innovative options. The seminars offered have changed the ways over 30 landowners approach wild hog management and 12 hunting camps now incorporate trapping along with shooting for wild hog removal.

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
605	Natural Resource and Environmental Economics
903	Communication, Education, and Information Delivery

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	Actual
2011	1097

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Deer hunting has an estimated $860 million impact on Mississippi?s economy annually. A majority (67%) of deer hunting takes place on private land. Thus, Mississippi's hunters and landowners have an interest in learning how to manage this species for recreation, ecological integrity of the landscape, and economic gain. Much information currently exists in the popular literature, but reliable, science-based information is often not readily available to the average

landowner, nor are face-to-face educational opportunities.

What has been done
Mississippi State University Extension Service Wildlife personnel have recognized the need for information regarding the management of white-tailed deer populations. In response, Mississippi State University Extension Service collaborated with scientists from Mississippi State University's College of Forest Resources and wildlife biologists with the Mississippi Department of Wildlife, Fisheries and Parks to develop a full-day white-tailed deer management educational program.

Results
Since 2009, this white-tailed deer management educational program has been delivered in four locations throughout Mississippi. In total, over 150 landowners and land managers have attended these workshops and represent over 250,000 acres in Mississippi. Deer workshop attendees are now equipped with information to better manage one of Mississippi's most ecologically and economically valuable natural resources.

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	Actual
2011	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The need to protect our natural resources is greater today than at any other time in human

history. Aquatic and terrestrial habitats are impacted by many stressors due to human population growth and development. This loss of habitat is leading to reductions of essential ecological services that could be potentially irreplaceable or very expensive to restore. With reductions in state and federal funding, educating the public about environmental issues is becoming more difficult due to the loss of environmental education staff.

What has been done
Mississippi State University Extension Service revitalized the Mississippi Master Naturalist Program in 2008 to educate the public about natural resource management and promote environmental stewardship within local communities. To become a Certified Mississippi Master Naturalist, the trainee must complete 40 hours of combined field and classroom instruction, obtain 8 contact hours of advanced training, and complete 40 hours of volunteer service. The program covers topics such as ecology, ecosystems, entomology, water quality, climate, geology, forest management, native plants, fisheries, and wildlife management.

Results
Since 2008, the Mississippi Master Naturalist Program has trained 79 participants at the Mississippi State University Coastal Research and Extension Center. Twenty-nine participants have become certified, 9 participants have become re-certified, conducting 2,758 volunteer hours, and serving 10,467 clients. This volunteer service is valued at over $52,402. Participants include tourism specialists, outreach professionals, educators, realtors, youth service program coordinators, volunteer coordinators, and retirees.

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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the five Wildlife & Fisheries impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 11

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%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	20%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	11.0	0.0	0.0	0.0
Actual Paid Professional	17.5	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
489980	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
489980	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 toreadiness 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.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU has 80 employees that serve on one of the 59 Communities of Practice. Our Child Development Specialist serves as a member of the eXtension Alliance for Better Child Care COP.

Overall, we have 241 employee eXtension users at Mississippi State University, with 23 new registrations in FY 2011. Our employees submitted 85 'Ask an Expert' questions and resolved 94 'Ask an Expert' questions in FY 2011.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	26992	14760	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	6	0	6

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	6959

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	Actual
2011	1392

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 preschool children. To improve the quality of care, it is important to maintain rigorous training with many opportunities for face-to-face training, distance training, and personal technical assistance. This ensures the gain of increased school readiness for young children and improved capacity of the early childhood workforce.

What has been done
Mississippi State University Extension Service increasedthe number of Mississippi Child Care Resource & Referral sites from 3 to 12. Sites provide materials, supplies, equipment, and services to parents, early care and education providers, students, child development centers, and community members at little or no charge. In 2011, the Mississippi Child Care Resource & Referral Network provided training workshops across the state. Extension also supported several mini-conferences and the annual Mississippi Early Childhood Association conference with trainings, displays, materials, and outreach.

Results
Twelve 'bricks and mortar' sites and one Mobile Resource & Referral unit serve all 82 counties in Mississippi. In 2011, the Mississippi Child Care Resource & Referral Network presented 868 training workshops, a 40% increase over 2010. Workshops were attended by 19,070 participants. Site visits increased 178%, from 3,833 visits in 2010 to 10,658 in 2011. 1,345 educational items were checked out from Resource & Referral offices. 2,237 hours of technical assistance were provided to 441 child care centers. Expanding the training and educational opportunities for early care and education providers will increase the quality of child care programs, 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	Actual
2011	557

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. Children who receive supportive, stimulating care are more likely to show normal development at age 2, 6, and 10 years. With an estimated 54% 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 provides information, training and technical assistance to in-home care providers who offer full-day, full-year childcare services. The program uses a nationally normed assessment tool, the Family Child Care Environment Rating Scale, to assess childcare quality. Initiative training coordinators use printed materials, one-on-one technical assistance, and interaction with the children to provide training that is time efficient, economically feasible for providers, and tailored to each provider's specific needs.

Results

During 2011, the Nurturing Homes Initiative was conducted in 48 counties with 125 in-home child care providers. Five Field Staff Technical Assistants conducted personalized technical assistance. Of the 125 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 Child Care Environmental Rating Scale.

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	Actual
2011	1113

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Current regulations permit the educational levels of non-Head Start early care and education providers to be minimal, creating a disparity in childcare quality. Mississippi also leads the nation in obesity, and childcare centers often reflect this lack of health education and practice. A training system with opportunities for face-to-face training, distance training, and personal technical assistance will ensure increased school readiness, improved capacity of the early childhood workforce, and more nutritious eating practices.

What has been done
In 2011, the Mississippi Child Care Resource & Referral Network and other partners developed the Allies for Quality Care program. The program, which currently serves 15 centers in Mississippi, enhances the overall quality of childcare facilities by identifying specific needs and providing holistic support over a 12-month period. In each individual classroom, Allies provides one-on-one technical assistance, learning environment assessments, menu planning for healthier

meals and smarter food purchasing, budgeting guidance, and cost-savings analysis.

Results
Allies representatives completed pre-program assessments for each of the 15 centers (73 classrooms). Evaluators prepared a baseline report from which technical assistants developed a Plan of Action and began providing assistance. Allies conducted at least 11 assessments (38 hours). Technical assistants conducted 430 visits (1,293 hours). Business advisors met with the center owners and directors for a minimum of 80 hours in 2011. The nutrition advisor met with the staff and director for 6 hours per month. A field supervisor observed the team while in centers and met with them regularly to discuss how the team could better meet their needs. Weekly and monthly updates, specialized assistance, and educational and resource materials also were provided based on a center's performance.

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

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the three Early Child Care and Education impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Family Resource 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
801	Individual and Family Resource Management	100%		9%	
802	Human Development and Family Well-Being	0%		44%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%		20%	
805	Community Institutions, Health, and Social Services	0%		27%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	2.0	0.0
Actual Paid Professional	7.1	0.0	1.2	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
197310	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
197310	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	874180	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Extension programming will be 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.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU has 80 employees that serve on one of the 59 Communities of Practice. Our Family Resource Management specialist is the leader of the Financial Security for All COP, and several of our professionals serve as members on that COP as well.

Overall, we have 241 employee eXtension users at Mississippi State University, with 23 new registrations in FY 2011. Our employees submitted 85 'Ask an Expert' questions and resolved 94 'Ask an Expert' questions in FY 2011.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	35227	20177	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	1	1	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	9234

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	Actual
2011	1847

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In Mississippi, 70% of students graduate, compared over 80% nationally. Higher levels of education generally lead to higher incomes over a lifetime, with an immediate average of about $10,000 per year more for a high school graduate than a dropout. Dropouts contribute about $60,000 less in taxes over a lifetime and reflect a lifetime national earning difference of $329 billion. Financial literacy and helping students understand the relationship of education and responsible choices to their future can change lives and impact local economies.

What has been done
Family Resource Management Area Extension Agents statewide have conducted "Welcome to the Real World" consumer simulation activities with Mississippi students for the past eight years. The Real World Program targets high school students, but it has proven successful with grades seven through college. The hands-on activity teaches the student about financial obligations faced as adults in the real world. Teachers, students, state partners for financial literacy, and community members become involved to make the program successful.

Results
Evaluations showed that 95% of participants believed it will help them in the future. In one typical session, 59.9% indicated they plan to get more education after high school and 52.3% indicated they plan to waiting until they are financially ready before having children. Translating results, if approximately 60% of the 11,000 students reached in the last year pursue further education to increase annual income by at least $10,000 each, the potential impact of the program to the Mississippi economy is $660,000 additional income for students reached in just one year by the program. Other comments made by students in evaluations include: "I cannot afford to have kids.? ?I had to have three jobs to pay my bills!" "Don't buy the most expensive thing." "I am going to stay in school so I can have a good job!"

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	Actual
2011	1477

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	Actual
2011	739

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Producers in the US shrimp industry are experiencing economic hardships due to rising production costs and competition from imported shrimp. Many shrimpers have been forced to leave the industry. In order for the domestic fishery to remain viable, producers need to learn how to reduce operating costs and get more money for their catch.

What has been done
Shrimp received formal certification under the Trade Adjustment Assistance Program for Shrimpers on June 25, 2010. The law states that Extension will provide the training for producers. Mississippi State University Extension Service scheduled 29 workshops and was successful in getting 517 applicants through Phase I of the program, which required each producer to receive 12 hours of technical assistance. This made them eligible to receive $4,000 each in cash benefits.

Results
517 shrimpers each received 12 hours of intensive technical assistance under the Trade Adjustment Assistance Program for Shrimpers, making them eligible for $4,000 each in cash benefits. This totals $2,068,000 in additional earnings for these producers. In addition, skills and knowledge gained through the program will make these shrimpers better able to compete in the world market with their products.

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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the Family Resource Management impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.
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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
724	Healthy Lifestyle	100%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	4.5	0.0	0.8	0.0
Actual Paid Professional	3.8	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
105606	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
105606	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 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.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU has 80 employees that serve on one of the 59 Communities of Practice. As an example, MSU is heavily engaged with the Families, Food and Fitness COP.

Overall, we have 241 employee eXtension users at Mississippi State University, with 23 new registrations in FY 2011. Our employees submitted 85 'Ask an Expert' questions and resolved 94 'Ask an Expert' questions in FY 2011.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	57883	56504	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 1

Patents listed

Patent app: In Vivo Vaginal Biomechanics Device

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total

Actual	1	1	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	19064

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	Actual
2011	3813

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Breast cancer is the most common cancer among women in the United States. It is also one of the leading causes of cancer death among women of all races. The use of screening tests to detect cancers early provides better opportunities for women. Women whose cancers are found early and treated in a timely manner are more likely to survive these cancers than are those whose cancers are not found until symptoms appear.

What has been done
The Breast Health program educated women on risk factors, signs and symptoms, and screening for breast cancer. Women 40 and older should get a mammogram every year. Women in their 20s and 30s should have a clinical breast exam as part of their regular health exam by a health professional. Breast self-exam is an opportunity for women starting in their 20s. Also, monthly breast self-exam is important for women of all ages to become familiar with their breasts. If there are any changes in the breast, they should contact their doctor.

Results
The program had 250 participants. Mississippi State University Extension Service partnered with hospitals, schools, faith ministries, and community organizations to implement the Breast Health program. Evaluations indicated that they had the recommended screening for breast cancer based on the American Cancer Society timeline. There was an increase in knowledge from pre- to post-test. Others were knowledgeable in conducting the three finger technique for the breast self-exam. The majority indicated that early detection is the key for better health.

4. Associated Knowledge Areas

KA Code	Knowledge Area

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).

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Other (Cultural traditions)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the two Human Health impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Human Nutrition

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	100%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	14.0	0.0	1.0	0.0
Actual Paid Professional	16.7	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
467046	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
467046	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 activities were be carried out, including:

- Partner with community groups and organizations to set up educational opportunities.
- Train/Update professional and paraprofessionals on new USDA Food Pyramid and other related

materials
- Conduct educational programs as needed
- Partner with local school systems to conduct nutrition-based research and provided nutrition education.

2. Brief description of the target audience

The audience for this program consists of all Mississippians. Special emphasis is placed on those who historically have demonstrated poor nutrition behaviors, which includes low-income populations--both parents and children in these families are targeted.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU has 80 employees that serve on one of the 59 Communities of Practice. MSU Extension was heavily engaged in the Families, Food and Fitness COP in 2011, where our Health Specialist served as leader and we had several members.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	175618	295144	278062	467312

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	10	12

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	202690

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
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 improved health and/or well-being due to changes in diet.

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	Actual
2011	40538

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In Mississippi, there are many nutritional concerns among the Supplemental Nutrition Assistance Program (SNAP) population. According to results of the Behavioral Risk Factor Surveillance System (2007), of Mississippians with incomes below $15,000/yr, 87.5% reported consuming less than five fruits and vegetables a day, compared to 81.9% for all Mississippians; 46.8% reported not being physically active within the past month, compared to 31.8% for all Mississippians.

What has been done
MSU Extension provides nutrition education to individuals that are SNAP eligible. The Family Nutrition Program offers classes for varying age groups that teach participants how to make healthy food choices. A Body Walk exhibit was also set up at 56 public schools in Mississippi and attended by 16,297 kindergarten through 5th grade students. Students received short lessons in each area of the exhibit to learn how to take care of their bodies such as participating in physical activity and making healthy food choices.

Results
Of 133 pre-k through 1st grade teachers, 83% observed students making healthier meal/snack choices, and 56% saw increased physical activity. Of 1,500 2nd-5th graders, the percentage exercising 1 hour increased by 15%. Of 370 3rd-6th graders, the percentage who 'almost always' eat a different kind of fruit/vegetable each day increased by 25%, while the percentage who 'almost always' drink milk/eat cheese three times each day increased by 26%. Of 50 6th-12th graders, the percentage who 'always' or 'most of the time' eat vegetables each day increased by 13%. Out of 116 adults, 28% "often" and 35% "always" plan to be physically active most days, and 31% "sometimes" and 32% "often" and 16% "always" expect to plan meals ahead of time. Of 114 adults, 31% "often" and 40% "always" plan to eat more like MyPyramid guidelines.

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	Actual
2011	32430

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi rates among the highest states in terms of prevalence of diet-related diseases. Cardiovascular disease, cancer, diabetes, and being overweight/obese are leading chronic diseases and conditions that are contributing significantly to higher mortality and morbidity rates. These chronic diseases are particularly concerning due to Mississippi's elevated poverty rate in comparison to the US. Mississippi's 2008 poverty rate was 20.8%, while the US poverty rate was 13.2%.

What has been done
Because poverty and poor health outcomes frequently coexist in Mississippi, nutrition education is needed. Expanded Food and Nutrition Education Programs (EFNEP) concentrate on: Diet Quality/Physical Activity, Food Safety, Shopping Behavior/Food Resource Management, and Food Security. The target audience is low-income families with young children and low-income children and youth. Schools and Head Start Centers welcome nutrition education programs. Programming is also conducted with adult audiences to promote dietary changes in the home.

Results
During FY 2011, EFNEP worked with 760 families in Mississippi. 92% of participants graduated (successfully completed 8 nutrition lessons). Among adults, food resource management practices improved: 59% more often planned meals in advance, 48% more often compared prices when shopping, and 60% more often used a list for grocery shopping. Nutrition practices improved:

68% more often used the 'Nutrition Facts' on food labels to make food choices, and 45% reported that their children ate breakfast more often. Food safety practices improved: 62% more often followed the recommended practice of not thawing foods at room temperature. Additionally, EFNEP paraprofessionals worked with 48,007 low-income children and youth through school, after-school, summer, and 4-H programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #3

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

Year	Actual
2011	16216

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Internet is a growing medium where people regularly turn to access important information. Unfortunately, a lot of health and nutrition information available online is biased oftentimes pushing products or quick fix weight loss supplements. In this Digital Age, it is important for Cooperative Extension to share the research-based, peer-reviewed health and nutrition information used in programming in an attractive, interactive, and easy to understand way.

What has been done
The eXtension Families, Food and Fitness Community of Practice is an online resource helping combat childhood and adult obesity. It offers articles about fruit and vegetable intake, physical activity, and preparing meals at home; a recipe database created by Mississippi State University Information Technology Services; and engaging interactive games for parents/teachers to explore with their children/students. Participants can interact with contributors (health and nutrition professionals from land grant institutions) using social media.

Results

A survey on the website indicates that participants report losing weight, exercising more, and improving diet as a result of information gained from the Families, Food and Fitness website.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the three previous Human Nutrition impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 15

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%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	9.5	0.0	0.0	0.0
Actual Paid Professional	8.3	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
231904	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
231904	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.

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.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	32909	41220	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	3	0	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	12355

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	Actual
2011	3459

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
County Forestry Association members are critical in the recruitment of family members and peers in their communities to Extension programming, in the adoption of new technologies, and acting as the local 'voice of forestry' in advocating stakeholders' positions on local natural resource issues. Like volunteer groups across the nation, many County Forestry Associations struggle to remain viable and need assistance in leadership and organizational development.

What has been done
MSU Extension Service forestry and leadership specialists provided leadership training to County Forestry Association members and other groups with natural resource missions. Specific objectives were: 1) assist leaders to prioritize issues and problems; 2) provide leaders a systematic process by which to address issues; and 3) encourage sharing experiences and ideas among participants. The programs took place in 20 counties. The curriculum took a community development perspective and issue-based approach.

Results
Five workshops were conducted for 52 participants, including County Forestry Associations, urban foresters, 'Friends of' groups, wildlife management organizations, forestry consultants, and agency personnel. Development of an action plan was a major benefit. Evaluations showed 46 respondents found the workshop very useful. Participants indicated they owned or managed 15,332 acres and said the training would be worth at least $2,650 as a privately sponsored program. Follow-up conversations with participants have revealed actions to improve membership recruiting; involve local officials and media to promote the group; engage in economic development; and reconstruct web sites, newsletters, and revised mission statements.

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	Actual
2011	1977

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Due to poor economic status and job layoffs, more and more agencies, hospitals, domestic violence groups, and families need assistance in providing services, donations, donated items and monetary gifts. Mississippi Homemaker Volunteers Clubs strive to strengthen and improve our families, communities, state, and country through continuing education so they can serve all people. Leadership Development provides training for the members of Mississippi Homemaker Volunteers who in turn train their club members.

What has been done
Mississippi Homemaker Volunteers have a generous spirit to help others. Leadership Development Agents serve as advisors and provide the members with a handbook, a county yearbook, numerous educational materials, and many community service projects which help members accomplish their vision statement: Strengthening families through education and involvement. Numerous leadership programs, workshops, demonstrations, interactive videoconferences, publications, fact sheets, and resource information are provided and offered to the 2,134 members.

Results
Mississippi Homemaker Volunteers contributed 344,656 volunteer hours with projects and volunteer work to help Mississippi residents with a value of $7,186,078. Each club made or provided items to the Blair Children's Hospital (821 blankets, 1,128 hats for cancer patients, 1,204 pairs of slippers, 505 teddy bears, 987 cough pillows, 793 therapy dolls, 721 gowns, 523 pairs of glasses, 172 silent layettes, 1,321 tote bags, and items such as cleaning and office supplies, food, and activities for children). The 2,134 members receive vast amounts of information to

assist Mississippi Homemaker Volunteers in improving their lives as well as to train and educate others. The 222 Mississippi Homemaker Volunteers Clubs receive approximately 600 Leader Trainings statewide and reach 82,000 individuals and families in their endeavors.

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

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the two Leadership Development impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 16

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%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	4.5	0.0	0.0	0.0
Actual Paid Professional	3.3	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
92493	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
92493	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.

3. How was eXtension used?

The Family Caregiving resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	9083	25285	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	5728

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	Actual
2011	1146

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi is the most obese state in the nation. To reverse this, more healthy food such as vegetables and fruit should be eaten. The cost and availability of fresh produce are limiting factors to low income families. More than 13% of the families in Madison County live in poverty. Over 3,675 families need assistance in putting food on the table. Over the years, the local food pantry run by Madison Countians Allied Against Poverty, realized that buying fresh vegetables to distribute weekly was a major drain on their limited funds.

What has been done
Madison County Master Gardeners helped write a grant which was funded by the Blue Cross Blue Shield Foundation to develop several gardens which would supply fresh produce to the Mississippi Food Network and county residents. Part of the grant funds were later awarded to Madison Countians Allied Against Poverty for establishment of a garden on land donated by a local church. The "Sow & Grow" community garden was the result of a partnership between local Master Gardeners, the mayor, and city workers.

Results
For those living in poverty to eat healthier, fresh produce must be incorporated into their meals. Since the establishment of the "Helping Hands" garden in March 2011, Madison Countians Allied Against Poverty volunteers have grown, harvested, and distributed 12,000 pounds of fresh vegetables to over 350 different families living in poverty in Madison County. The Mississippi Food Network is currently offering nutritional classes to clients receiving the produce so they learn the best way to prepare a healthy meal. Thirty individuals or groups participated in the "Sow & Grow" community garden project to plant and grow fresh produce to supplement their bought food budgets.

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	Actual
2011	916

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Regular attendance in high quality out-of-school programs results in better personal, social and academic skills for school-age children, as well as better self-esteem. Children who participate in such programs are also less likely to be involved with illegal drugs, crime, alcohol, cigarettes, and sex. In Mississippi, 25% of school-age children are unsupervised after school. School-age programs are only available to 11% of the K-12 youth of the state. It is vital to establish a system that supports high quality school-age care and education experiences.

What has been done
The Out of School project supports the development of school-age professionals through interactive face-to-face workshops and on-site training at childcare centers. Locations include Extension offices, childcare and Head Start centers, churches, university and community college campuses, and family and parenting centers. The School Age Care Environment Rating Scale is used to assess and address program needs. Programs can participate in the Quality Rating and Improvement System. The project offers a Child Development Associate credential.

Results
In its first year (2011), the Out of School project conducted a total of 53 trainings and served 597 participants. By aligning standards through the Quality Rating and Improvement System, the Out of School project achieves quality through creating a standard where there was only before a "non-system" that underserved and underprepared children for school success. The Out of School project responds to the needs of school-age children by delivering targeted programs that encourage inclusion, physical development, and academic enrichment. Through professional development and referral services, this project supports meaningful experiences. Additional

benefits are improved academic success and workforce development.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the two Family Life impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 17

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
205	Plant Management Systems	10%		0%	
206	Basic Plant Biology	5%		0%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		18%	
212	Pathogens and Nematodes Affecting Plants	5%		18%	
213	Weeds Affecting Plants	5%		23%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%		0%	
215	Biological Control of Pests Affecting Plants	10%		2%	
216	Integrated Pest Management Systems	50%		37%	
723	Hazards to Human Health and Safety	0%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	3.5	0.0	0.2	0.0
Actual Paid Professional	4.4	0.0	6.1	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
124490	0	185353	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
124490	0	113601	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	2748031	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.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU has 80 employees that serve on one of the 59 Communities of Practice. As an example, one of our specialists serves on the Urban Integrated Pest Management COP.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	18613	10052	0	0

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

Patent Applications Submitted

Year: 2011
Actual: 1

Patents listed
Patent app: Novel Oxime Therapeutics for Organophosphate Anticholinesterase Poisoning

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	5	32	37

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	4778

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	Actual
2011	956

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Aerial web blight, Rhizoctonia solani, is a disease of soybeans that can cause yield losses of 80%. The disease is a soil borne pathogen that develops foliar symptoms in hot, humid environmental conditions. The environmental conditions were conducive to the development of aerial web blight in 2011 in Northeast Mississippi. The disease can be controlled with fungicides if infections are identified early and timely applications are made.

What has been done
Once aerial web blight was confirmed in Northeast Mississippi, soybean growers were informed of the presence and risks through various media. Individual consultations were utilized to assist growers with disease identification and control measures.

Results
Individual consultations were made with producers that included approximately 15,000 acres of soybeans. Aerial web blight was identified in all fields and fungicides were applied when disease incidence and crop growth stage would result in prevention of yield losses. Average soybean yields in the areas consulted are approximately 40 bushels per acre. Early detection of aerial web blight and timely applications of fungicides prevented crop losses of approximately $2,000,000.

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	Actual
2011	764

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Soybean fields in Mississippi were scouted for the presence of yield limiting diseases including nematode infestations. An important impact of the scouting is preventing the application of unnecessary fungicide applications. Soybean rust is one of the most potentially damaging soybean diseases. However, the disease does not generally occur on an annual basis but more often than not rumors drive decisions to apply a fungicide regardless of the presence of a particular disease.

What has been done
To stay abreast of the particular diseases in the Mississippi soybean production system, Mississippi State University Extension Service conducts a statewide disease monitoring program to determine the presence of important soybean diseases as well as provide important management suggestions throughout the season. In addition, early-planted soybean plots are planted throughout key locations in Mississippi to detect the presence of soybean rust as well as monitor for other important soybean diseases.

Results
The disease monitoring program is saving producers money by suggesting they not apply a fungicide based on the presence (or absence) of diseases such as soybean rust. Fungicide application to prevent yield loss could cost $20/acre (depending on product, number of ounces

purchased, amount of water used, and application method). Typically, soybean rust is more of an issue later in the season, and if Mississippi soybean producers plant 500,000 acres of late soybeans, then the disease monitoring program could prevent producers from spending $10 million statewide. The disease monitoring program provides information to prevent the unnecessary application of fungicides in addition to up-to-date information for soybean producers regarding the presence of a potentially devastating foliar soybean disease.

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	Actual
2011	382

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Pesticides are used extensively in Mississippi for public health vector control, mainly for municipal mosquito control, but also for certain urban pests that may have public health implications such as bed bugs. Often pesticides are relied upon almost exclusively for control of these pests, without thought for other non-chemical control methods.

What has been done
In 2011, Mississippi State University Extension Service gave 27 lectures at various venues on the subject(s) of medically important public health pests, which included ways to control them. During these presentations, a variety of both chemical and non-chemical control measures for these pests are mentioned and Integrated pest management in public health is emphasized. In addition, two pesticide training videos were made on the subject of public health pests which also promoted integrated pest management in public health programs.

Results

Our presentations and consultations with pest control personnel have raised awareness of the need for integrated pest management in public health vector control. Use of pesticides in public health programs has decreased in Mississippi over the last two years based on anecdotal evidence collected (e.g., discussions with municipal mosquito control personnel).

4. Associated Knowledge Areas

KA Code	Knowledge Area
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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the three Integrated Pest Management impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 18

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
306	Environmental Stress in Animals	0%		2%	
601	Economics of Agricultural Production and Farm Management	40%		9%	
602	Business Management, Finance, and Taxation	0%		15%	
603	Market Economics	0%		30%	
604	Marketing and Distribution Practices	40%		6%	
609	Economic Theory and Methods	0%		12%	
610	Domestic Policy Analysis	20%		21%	
805	Community Institutions, Health, and Social Services	0%		3%	
901	Program and Project Design, and Statistics	0%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	1.0	0.0
Actual Paid Professional	2.0	0.0	4.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
54952	0	127813	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
54952	0	373434	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	785955	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:

1. 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.
2. 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.
3. 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.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4609	5231	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	17	19

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	1640

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	Actual
2011	328

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Agricultural technological developments are rapidly being introduced and incorporated into cropping systems. However, much of the information is driven by industry and directed towards entities making a profit, and consequently has limited value to the public. This ingenuity has led to many good products and some that do not perform as advertised. Mississippi growers will have difficulty telling which is which, and whether it is worth the asking price, without independent evaluation.

What has been done
With advances in technology, Mississippi State University Extension Service recognized the need to improve information delivery. Faculty and agents supporting row crop production developed a web-based blog in January 2011 in addition to traditional newsletters. The Mississippi Crop Situation Blog generates nearly 10,000 contacts per month (over 85,000 total). Extension faculty have published 210 posts on multi-disciplinary subjects on all crops grown in Mississippi, e.g., cotton, corn, soybeans, rice, peanuts, grain sorghum, and wheat.

Results
The blog (www.Mississippi-Crops.com) has improved efficiency of outreach technology transfer and reaches many more new and diverse clientele, while reducing travel, time and expenses associated with traditional methods. Mississippi's growers are producing high crop yields and realizing more profitability because they are applying better management practices and incorporating improved technology transferred through Extension educational activities. These practices are improving crop health and productivity. For example, using superior crop genetics evaluated and suggested by Mississippi State University increased raw value of Mississippi's crop commodities over $250 million in 2011, improved product quality, increased production efficiency and reduced production input expenses.

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	Actual
2011	262

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Grain production in Mississippi has exceeded existing storage capacity. One popular alternative storage method was grain bag storage, also known as silo bags. This technology relies on a hermetic seal of the enclosing polyethylene bag to protect grain quality. This system has been used in other regions of the world, but since weather conditions, agricultural methods, and cultural practice vary, further research was required to assess this storage practice for the local region and its effects on grain quality.

What has been done
A system and method were developed to monitor in-situ grain bag internal environment. Further work evaluated the internal environment and quality effects of commercially conditioned grains stored for up to 20 weeks in grain bags. Another study assessed harvest condition grain stored in grain bags for up to 12 weeks. Results were analyzed and best practices were developed. Grain bagging demonstrations were conducted with the assistance of farmer cooperators. An economic comparison of grain bags and traditional grain storage systems was developed.

Results
Results indicated that commercially conditioned corn and soybeans could be stored for months with little quality loss. There were local areas of grain degradation within the bags, but now the

extent of the damage and its economic impact can be predicted. Harvest condition corn did significantly lose quality while in storage bags; only a short storage period can be recommended. In-field demonstrations allowed producers and commercial storage facilities to determine if/how this alternative storage system fit into their operational or grain marketing plan. The economic analysis will give managers a tool to directly compare costs associated with increasing grain storage capacity with both traditional and grain bag systems. Future efforts could result in a tool to monitor grain stored in bags so loss is minimized.

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

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the two Risk Farm Management impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 19

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%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	62.5	0.0	0.0	0.0
Actual Paid Professional	84.2	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
2356558	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
2356558	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
- Provide 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, including the following:
- 4-H Club Congress
- District Achievement Days
- County, State, & Regional Fairs
- Livestock and Horse Shows
- To Provide training to Extension personnel on experiential education through subject-matter work:
- Chartering all 4-H Clubs and groups
- Four Essential Elements
- Legal Use of the Name and Emblem
- Diversity Training
- Financial Management

2. Brief description of the target audience

All Mississippians between the ages of 6 and 18.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	130111	133758	303591	312103

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	9	0	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth enrolled in 4-H Clubs.

Year	Actual
2011	23934

Output #2

Output Measure

- Number of clubs operating on military bases.

Year	Actual
2011	7

Output #3

Output Measure

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

Year	Actual
2011	429

Output #4

Output Measure

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

Year	Actual
2011	2250

Output #5

Output Measure

- Number of volunteers attending state volunteer leaders conference.

Year	Actual
2011	241

Output #6

Output Measure

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

Year	Actual
2011	56

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	Actual
2011	8104

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Volunteers are essential to the successful delivery of 4-H programs to youth.

What has been done
In 2010 there were 8,104 youth and adult volunteer leaders working directly and indirectly with Mississippi youth.

Results
The average 4-H adult volunteer donates 220 hours per year in preparing for club meetings and teaching youth. Each volunteer drives an average 300 to 400 miles for 4-H in a personally owned vehicle and spend $40 to $60 annually on teaching materials. Estimated value of the total time volunteers devote to 4-H plus their out-of-pocket expenses is over $27,242,406.00

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	Actual
2011	2547

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
One of the 4-H Mission Mandates is Science, Engineering, and Technology (SET). There has been a decrease in students majoring and completing degrees in Science related fields of study. In 2008, National 4-H launched a campaign to increase youth awareness in SET Fields. Mississippi's 4-H goal is to increase 5,000 youths' awareness of science each year by 2013.

What has been done
In 2011, the Mississippi 4-H Program was able to bring awareness of science through 4-H science educational packets, providing trainings to 4-H Volunteers, 4-H Leadership Team Members, and Extension Staff. Supplies were secured through grants to conduct 4-H Science Field Days, National 4-H Science Day, in/out of school science activities, and the NASA Summer of Innovation.

Results
A total of 16,170 youth and adults gained awareness of science through hands on learning in the Mississippi 4-H Science Program. 26 counties participated in NASA's Summer of Innovation. 660 youth participated and received more than 20 hours of hands on science activities. 7,580 youth participated in Mississippi's 4-H Science Day. 55 4-H Leadership Team Members received 3 hours of hands on science training and demonstrated science experiments during 4-H Day at the Mississippi State Fair and the 4-H Celebration at the Mississippi Agriculture Museum to an estimated 3,300 individuals. 75 4-H Volunteer Leaders received training during the two District 4-H Volunteer Leader Forums and at the Annual Mississippi 4-H Volunteer Leaders Conference. 4,500 youth participated in 4-H Science Field Days in/out school science experiments.

4. Associated Knowledge Areas

KA Code	Knowledge Area

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

Year	Actual
2011	1145

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Military children and youth face more than the usual challenges of growing up, such as moving every few years and establishing new friendships, while worrying about family members who have been deployed. Through the Mississippi 4-H Program, military youth at Columbus and Keesler Air Force Bases, Meridian Naval Air Station, and Naval Construction Battalion Center Gulfport are able to experience a variety of programs and projects focused on experiential learning and the development of personal and life skills.

What has been done
One program associate works ½ time for 12 months assisting Extension staff in carrying out the Mississippi 4-H Military Program at Keesler Air Force Base and Naval Construction Battalion Center Gulfport. Two summer interns each worked 12 weeks (40 hours per week) assisting Extension staff with programming at Columbus Air Force Base and Meridian Naval Air Station. All three collaborate with state contacts for the National Guard and all military Reserves in their respective areas to assist with 4-H programming outside the gates of installations.

Results
More than 183 military youth are enrolled in 7 chartered 4-H clubs. These youth and 20 adult volunteer leaders are involved with 4-H projects focusing on science, engineering and technology, healthy living and citizenship through their 4-H club membership, as well as county, district and statewide community service projects, conferences, leadership roles and contests. Volunteers participated in training opportunities conducted at county, district and state levels. Additionally: 4-H teens work better together after 4-H diversity training; involvement of 4-H military youth in 4-H competitions at county, district and state levels increased; participation by 4-H military teens with the state 4-H leadership team increased and one was elected to a state 4-H council officer position.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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	Actual
2011	16866

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi ranks 12th in the nation for having the highest number of All Terrain Vehicle (ATV) related injuries and fatalities. This number was especially high among youth 16 years of age and younger. Mississippi had no laws that governed operators of ATVs which made the issues of injuries and fatalities a real concern. Since the 4-H Program reaches out to this age group, 4-H wanted to be a catalyst for reducing the number of injuries and fatalities through safety awareness and by offering ATV RiderCourse training for youth and adults to participate.

What has been done
Mississippi 4-H offered a 4.5 hour interactive RiderCourse. More than 13 Extension Agents and 1 Extension 4-H Specialist received the ATV Safety Institute?s Safety Instructor Certification which enabled them to teach the research-based training. During the three year grant, over 500 individuals were reached. The ATV non-riding Awareness Educational program reached 3,500 youth across the state through ATV Safety Day Camps, Progressive Farmer Safety Days, afterschool programs, eCourse through the ATV Safety Institute, and home school association programs.

Results
A new law was passed in July 2011 that referenced youth 16 years old and younger. The law requires youth this age to participate in an ATV Safety Course if they plan to operate an ATV unit on public lands. The law was primarily introduced because of the work done through Mississippi State University Extension Service 4-H ATV Safety program. 4-H was noted in the bill as being one of the experts in the area of ATV Safety that the public could call on for training. A permanent

ATV Safety Training facility has been developed on the property owned by the 4-H Foundation of Mississippi, Inc. in the West Point area.

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	Actual
2011	14336

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Research indicates that students who perform poorly in math and science as early as 4th grade commonly struggle with those topics through high school and beyond. Elementary school students in Mississippi rank 49th in the nation for science scores and 1st for childhood obesity. A need exists to engage youth in real-world experiential science programs while increasing their activity levels. An equally critical need exists to create environmentally-literate and socially-engaged citizens who understand and conserve natural resources.

What has been done
The Starkville Science Club 34-week afterschool program is in its 4th year of educating students weekly in environmental-based science topics. A second approach to conservation, Youth Environmental Sciences Learning Center (YES!), takes place during the school year and allows 4th and 5th graders to be immersed in multisubject environmental education curricula for one week; 3rd graders receive two days of programming. The YES! program uses standards-based, experiential learning approaches.

Results
Since 2008, the Starkville Science Club has provided afterschool science programming to 160 4th-6th grade students. Evaluations administered to parents of students in the Club indicate the program boosts test scores in math and science while building youth confidence and leadership

skills. All students and parents reported greater interest and knowledge of science, natural resources, and scientific method. Over half of parents reported an increase in communication skills, team work abilities, leadership qualities, and attitudes toward learning. The YES! program impacted over 1,200 3rd-5th grade students. During the pilot year of YES!, teachers and students reported increased enthusiasm for scientific experimentation and natural resource conservation.

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	Actual
2011	8433

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Firearms are in 1 out of every 3 households in the United States. Many fatal accidents occur every year through the misuse or mishandling of firearms. Most of these accidents could have been avoided through proper education and knowledge of firearm safety.

What has been done
In 2011, over 8,000 youth ages 8-18 were enrolled in the 4-H Shooting Sports Program in Mississippi. Each youth received a minimum of 8 hours of safety instruction per discipline in which they were a participant. This instruction was given to the youth from a state level certified instructor specific to the discipline. Trainings for these instructors are offered annually throughout the state in order to equip them with the most current information regarding the discipline as well as other opportunities to expand their knowledge base of the project area.

Results
Through the 4-H Shooting Sports program in Mississippi, the youth of our state are being educated not only in the area of firearm and archery safety, but through the development of life skills that will enable them to become responsible adults in the future. Grant monies received from

state and private donors allow for additional instruction and materials to sustain this ever growing program. Because of these and many other efforts, enrollment for the 4-H Shooting Sports program has continued to increase in the past several years. According to recently collected data, current numbers in the program have already risen above 2,000 more participants than in the previous year.

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	Actual
2011	8433

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The opportunity to develop our leaders of tomorrow is firmly rooted in the 4-H livestock program. Today it is a challenge to keep young people involved in livestock programs due to the many outside activities that draw on their time and energy. Retention and recruitment of young people is essential to developing discipline and leadership skills.

What has been done
To stimulate interest and life skills through the livestock project, the Mississippi State University Extension Service goat specialist worked with the Mississippi Club Goat Association to adapt a program that would reward youth for participation. In 2010, an awards program was initiated in the meat goat project. Mississippi Club Goat Junior Show Circuit rules and regulations were administered by Extension to reward exhibitors for showing their animals in the market, commercial doe, and showmanship divisions of sanctioned shows around the state.

Results
In the first year of implementation, over 60 youth joined the Mississippi Club Goat Junior Show Circuit to earn points in each of the three divisions. At the end of the year, the top 5 exhibitors in

Junior, Intermediate, and Senior Showmanship, Market Goat, and Commercial Doe points were honored at a leadership banquet. It is estimated that 10 of the 19 sanctioned shows experienced at least a 10% increase in goat entry numbers as a result of the program. In all, over 2,000 head of goats were exhibited by youth in these 19 sanctioned shows while increases occurred in non-sanctioned county and area shows as well. Statewide, exhibitors spent more hours showing goats in the ring at more shows than ever before. As a result, these youth were allowed more time to gain confidence and learn valuable life skills.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

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)

Evaluation Results

MSU Extension youth development agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the youth development impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 20

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
403	Waste Disposal, Recycling, and Reuse	0%		13%	
511	New and Improved Non-Food Products and Processes	0%		13%	
608	Community Resource Planning and Development	25%		27%	
609	Economic Theory and Methods	25%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	25%		16%	
805	Community Institutions, Health, and Social Services	25%		31%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.0	1.5	0.0
Actual Paid Professional	13.2	0.0	1.4	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
368491	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
368491	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	509567	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Extension will assist local communities in conducting the following activities:

- 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 assistanceHolding 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 servicesDeveloping quantitative profiles of health organizations
- Conducting feasibility studiesProducing gap analyses
- Promoting coalition building trainings
- Conducting tourism development workshops
- Providing customer service/hospitality trainings
- Conducting leadership development workshops
- Providing 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.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists. eXtension was also used as a resource in state-based planning processes. Further, MSU has 80 employees that serve on one of the 59 Communities of Practice. For example, several MSU faculty members serve on the Entrepreneurs and Their Communities COP.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	77512	58992	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	4	1	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	22691

Output #2

Output Measure

- Number of communities requesting economic analyses.

Year	Actual
2011	35

Output #3

Output Measure

- Number of communities participating in community health improvement activities.

Year	Actual
2011	25

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	Actual
2011	4550

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Communities in Mississippi recognize a need to improve their built and physical environments. There is significant will in the communities to enact needed improvements, but little knowledge of how to decide on, design, or perform these improvements. The communities know they need something, but do not know exactly what they need. They often do not know how to go about determining what they need versus what they want, or how to plan for meeting those all those needs and/or desires. In short, they need trained, informed, professional advice and services.

What has been done
Mississippi State University Extension Service meets with community representatives to determine problems, needs, and desires. These discussions are used to create a Program for Development with the representatives. Potential project site(s) are analyzed and conceptual plans are prepared and revised. Mississippi State University Extension Service works with representatives to further educate them about design disciplines and construction administration needed for their project.

Results
Mississippi State University Extension Service assisted with consultation, planning, and design for 10 projects. Contacts were educated on the importance of the impacts of design and/or the lack of design as well as environmental impacts of their project decisions. This generated work for practicing engineers, architects, and landscape architects to complete the final plans and construction documents. Extension provided approximately 300 hours of pro bono services for these projects which equates to over $55,000 if billed by private practitioners. Examples of projects included parks, stormwater management, landscape enhancement, new building placement, tree protection, and master planning.

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

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	Actual
2011	3640

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Decision-making skills and leadership skills are needed throughout the state in thousands of clubs and organizations to contribute to making better leaders.

What has been done
Mississippi State University Extension Service Leadership Development Agents conducted leadership trainings for volunteers, members of civic organizations, local and state government officials, community leaders, decision makers, agencies, and agents of social services.

Results
Clientele have enhanced their decision-making skills and trained others. Many have assumed leadership positions in their organizations, learned to work with diverse audiences, and understood the impact of public issues effecting communities.

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

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	Actual
2011	6100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi Department of Agriculture and Commerce and Mississippi State Department of Health work together to develop and provide a workable regulatory program without requiring vendors at Mississippi Certified Farmer's Markets to meet strict regulatory requirements which would make participation cost prohibitive. Mississippi State University Extension Service has been asked to provide the training and technical assistance to the vendors.

What has been done
Mississippi State University Extension Service's General Food Safety training was incorporated into two of the trainings but will be delivered in a separate session in the future.

Results
In 2011, three training classes were conducted by program coordinators from Mississippi State University Extension Service. Seventy-nine participants have completed the training , successfully passed the exam (86% pass rate), and received certificates for the Acidified Canned Foods training and will be able to sell acidified canned foods at Mississippi Certified Farmer's Markets once their processing areas are approved by the Mississippi State Department of Health. Thirteen other participants completed the training but did not successfully pass the exam.

4. Associated Knowledge Areas

KA Code	Knowledge Area

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

Year	Actual
2011	42

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Rural communities in Mississippi have been faced with multiple budgeting shortfalls. This has left communities with difficult decisions to make with regards to spending policies. Communities must determine the best use of public dollars in order to reach community goals.

What has been done
Mississippi State University Extension developed a process that enables communities to evaluate festivals and special events from an economic impact avenue as well as from a marketing and community perception angle. The process consists of developing surveys tailored to communities, creating an economic impact analysis, creating a market analysis and customer profiles, conducting event evaluation, training volunteers and event staff, developing a report of findings and recommendations, and training policy makers how to use the information.

Results
This process has been used to measure the Columbus Market Street Festival, the Peter Anderson Arts Festival, and Cruisin' the Coast. The process has resulted in increased community support for local events, increases in sponsorship for events (in excess of $60,000), increases in community engagement and publicity, improvements to event facilities, event staff training, and marketing. This process raised awareness of tourism and cultural arts as an economic development tool. The process improved the development of partnerships between local organizations. Mississippi State University Extension Service trained over 300 tourism and Main Street managers is Mississippi, Alabama, Louisiana, Arkansas, and Tennessee in 2011.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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	Actual
2011	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi has the second to lowest number of physicians per capita in the nation. Clearly, this limits access to care for the state's citizens and contributes to many of the negative health status indicators plaguing the state.

What has been done
In response to this concern, Mississippi State University Extension Service developed and directs the Rural Medical Scholars program. The objective of the program is to "grow local docs" for the state by identifying talented and interested high school students and exposing them to academics and experiences relevant to the life of a family medicine physician. During the program, the Scholars enroll in two pre-medicine courses, "shadow" local physicians, and participate in a variety of activities related to rural physicians.

Results
To date, 256 students have gone through the program. Approximately 72% of our graduates have gone on to pursue a health-related career, 26 went to medical school, and 17 are practicing physicians as of today. Of the 17 practicing physicians, 10 are practicing within Mississippi, and 10 of the 17 are in primary care private practice or residency programs. Many others are going into nursing, and some in pharmacy, counseling, dentistry, physical or occupational therapy, and medical research. The program is beginning to pay dividends for the state. A recent study has shown that the addition of one physician to a typical Mississippi county results in an increased economic output of $2 million.

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.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	28

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 with employees who have a better understanding 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
In 2011, 31 classes were taught by ten ServSafe certified MSU-ES instructors to 479 individuals seeking certification. Participants from 118 Mississippi communities and three states attended a Mississippi State University Extension Service ServSafe course during 2011. The ServSafe course was offered in 18 different Mississippi counties across the state. Passage rate for all attendees taking the certification exam was 78%. MSU-ES instructors have been praised for their dedication and professionalism regarding the curriculum and training by many of the participants. The MSU-ES ServSafe program continues to be recommended by the Mississippi State Department of Health to businesses and individuals seeking certification in Mississippi.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #7

1. Outcome Measures

Number of local communities improving their health services.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	23

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The South Quitman Utility District that manages and operates five separate water supplies in Tallahatchie and Quitman counties (two in Quitman County and three in Tallahatchie County) had scored a 1.0 out of a possible 5.0 on the annual Capacity Development Assessment performed by the Mississippi State Department of Health-Bureau of Public Water Supply for three

consecutive fiscal years (2006, 2007, 2008).

What has been done
Mississippi State University Extension Service Community and Economic Development Specialists, through the Peer Review Program for Public Water Systems, conducted multiple site visits to the South Quitman water systems, meetings between the board members and the certified operator, and a working session with the utility district's accountant and bookkeeper to assist Mississippi water systems to become compliant with the Mississippi State Department of Health annual Capacity Development Assessment.

Results
After Extension's first visit in FY 2009, the South Quitman Utility District increased its Capacity Development Assessment score from 1.0 to 2.3. After the second visit (FY 2010), the Utility District increased its Capacity Development Assessment score from 2.3 to 3.7. After the third visit (FY 2011), the Utility District increased its Capacity Development Assessment score from 3.7 to 4.7. The Utility District has made great strides in progress from its initial working session with the Mississippi State University Extension Service. From the initial Peer Review, the utility district was only complying with 3 of the 15 State Department of Health requirements, and as a result of Extension's assistance, the Utility District is now meeting 14 of the 15 requirements.

4. Associated Knowledge Areas

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

Outcome #8

1. Outcome Measures

Number of communities reporting increased levels of tourist activity.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In an effort to promote economic development in its county and the surrounding area, Choctaw

County Economic Development Administration (CCEDA) officials have decided to pursue a strategy based on one of their most plentiful assets: woody biomass. In order to mount a successful effort at either attracting or helping to create businesses in the region, CCEDA officials felt that they needed to have knowledge of the levels of biomass that was available on an annual basis to determine if the region could actually support these industries.

What has been done
MSU E&CRD unit developed a series of fact sheets detailing the availability of biomass in Choctaw County and the surrounding area. As a result, the CCEDA is hosting a series of meetings with the county forestry associations and other groups to determine private landowners? interest in create a pool of biomass that could be marketed to prospective industries.

Results
While it is still too early to predict the final result, CCEDA expects a great deal of interest from private landowners for this concept.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

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)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the eight Enterprise and Community Development impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results

are a combination of this quantitative and qualitative data.

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
704	Nutrition and Hunger in the Population	30%		0%	
724	Healthy Lifestyle	70%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	0.0	0.0
Actual Paid Professional	2.5	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
70404	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
70404	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 will include almost all types of media and educational activiies. Courses on nutrition labeling, preparing healthy meals by reducing fat and calories, exercise, and many other topics were provided for adults. Classes and other activities both in and out of school on diet and exercise were

provided for children/youth. These programs complement programs offered by schools and other organizations.

2. Brief description of the target audience

The primary audience for this program includes almost one million obese Mississippians.

3. How was eXtension used?

The Childhood Obesity resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	19294	18835	19294	18835

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of people attending workshops, short courses, etc.

Year	Actual
2011	12710

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 at least one behavior related to obesity (increase level of regular exercise, decrease in caloric intake, increase in percentage of fruits and vegetables in diet).
2	Number of people reporting lowered body mass index.

Outcome #1

1. Outcome Measures

Number of people reporting a positive change in at least one behavior related to obesity (increase level of regular exercise, decrease in caloric intake, increase in percentage of fruits and vegetables in diet).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2542

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is no secret that Mississippi is the most obese state in the nation. According to a recent report from the Centers of Disease Control and Prevention, the Delta has one of the largest concentrations of obesity in the state. This project centers on reducing the incidence of obesity in four Mississippi Delta counties - Carroll (35%), Holmes (42%), Leflore (39%), and Sunflower (40%).

What has been done
In response to this concern, Mississippi State University Extension Service developed and directed the Get Healthy Trim Down Delta project. Through the formation of grassroots community action groups and development of lay health education volunteers, we hope to impact obesity and create a climate of wellness within the four counties.

Results
As an outgrowth of community forums conducted to identify local factors contributing to rising obesity rates, 9 community action groups of local residents were formed in the four counties and trained in how to move from talk to action. Examples of early successes of the groups include: community gardens, community walks, and work with city government to open an abandoned high school gym for walking. 36 individuals participated in the volunteer training and within the first month after training, they shared these messages with 58 individuals and contributed 34 volunteer hours to improving the health of their fellow Deltans.

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

724 Healthy Lifestyle

Outcome #2

1. **Outcome Measures**

Number of people reporting lowered body mass index.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes (for an example, see one of the two Childhood Obesity impact statements in previous section).

In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

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
133	Pollution Prevention and Mitigation	0%		6%	
501	New and Improved Food Processing Technologies	0%		9%	
502	New and Improved Food Products	0%		10%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		20%	
608	Community Resource Planning and Development	0%		3%	
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%		50%	
723	Hazards to Human Health and Safety	0%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	1.0	0.0
Actual Paid Professional	2.9	0.0	5.2	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
82420	0	90925	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
82420	0	352796	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	1201793	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

MSU Extension Service, 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 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.

Key Training Areas Include:

The Food Safety Challenge
Providing Safe Food
The Microworld
Contamination and Food Allergies
The Safe Food Handler

The Flow of Food Through the Operation
Purchasing, Receiving, and Storage
Preparation
Service

Food Safety Management Systems, Facilities, and Pest Management
Food Safety Management Systems
Sanitary Facilities and Equipment
Cleaning and Sanitizing
Integrated Pest Management

Food Safety Regulations and Employee Training
Food Safety Regulations and Standards
Employee Food Safety Training

2. Brief description of the target audience

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.

3. How was eXtension used?

The Food Safety resources provided through eXtension were used to supplement and enhance our public learning experiences provided by MSU Extension agents and specialists.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	19513	32794	14635	24595

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	3	186	189

V(F). State Defined Outputs

Output Target

<u>Output #1</u>

Output Measure

- Number of people attending certification courses.

Year	Actual
2011	15256

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
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2441

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Centers for Disease Control and Prevention reported that Salmonella alone is estimated to cause 1 million illnesses annually at cost of $365 million annually. Despite progress in preventing foodborne illness, children under age 5 continue to have the highest incidence of illness due to major foodborne pathogens tracked by FoodNet. A three-pronged approach to food safety is thought to be effective in reducing illness -- mandated regulation and inspections, Food Manager training such as TummySafe© and consumer education.

What has been done
Mississippi State University Extension Service implements the TummySafe© Food Safety Certification Program to certify childcare providers in safe food handling practices via 2 methods: 1) provider works through an instructional CD on their computer and then a Registered Proctor at their local county Extension Office administers the certification exam or 2) provider attends a traditional class instructed by an Extension Agent and takes the exam after. An 80% is required for Certification.

Results
During the 2010-2011 program year, TummySafe© offered 13 traditional classes and administered 516 exams dispersed all over Mississippi?s 82 counties. Participants must score at least 80% to become certified. The certification is good for 5 years. An estimate of 2-3 employees per center at approximately 1,700 childcare centers in Mississippi would give a conservative estimate of 5,100 childcare providers completing TummySafe© annually for contact hours only. By completing TummySafe©, participants are armed with the knowledge of how to serve safe food and why it is important to practice good personal hygiene. By becoming certified, they are also better able to gain employment in the childcare industry as well as get promotions.

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Public Policy changes
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 23

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
101	Appraisal of Soil Resources	0%		72%	
111	Conservation and Efficient Use of Water	15%		0%	
112	Watershed Protection and Management	0%		15%	
132	Weather and Climate	85%		0%	
205	Plant Management Systems	0%		13%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	0.0
Actual Paid Professional	0.0	0.0	0.3	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
0	0	104614	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	31369	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	80924	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research and extension efforts on adapting to climate change and decreasing greenhouse emissions.

2. Brief description of the target audience

Agricultural producers and agricultural industry supporting production agriculture.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of people attending workshops, short courses, etc.

Year	Actual
2011	1

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/extenson recommendations.
2	Number of producers reporting increased income/decreased expenses based on practice changes.

Outcome #1

1. Outcome Measures

Number of producers adopting new practices based on research/extenson recommendations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Erosion caused by wind, water and wave action results in loss of residential and commercial property, reduction of storm buffering capacity, aquatic and terrestrial habitat loss, increased suspended solids and water quality degradation. To combat these effects, property owners often erect bulkheads or seawalls. While these methods are effective, they also tend to alter or create a loss of natural habitat. Living shorelines present an ecological and economic alternative that may be viable for low-erosional settings.

What has been done
Since 2004, the Mississippi State University Coastal Research and Extension Center has conducted 6 Living Shorelines workshops in Mississippi, Alabama, and Florida; published 3 Extension publications related to natural erosion control structures; and made numerous presentations to promote alternatives to vertical bulkheads throughout the Northern Gulf of Mexico. The Gulf of Mexico Alliance Training Program adopted the structure and content of these workshops and has conducted trainings for more than 504 participants.

Results
In October 2011, the Mobile District of the US Army Corps of Engineers adopted a new 'Living Shorelines' General Permit. This will make it easier for businesses, landscape and marine contractors, and shoreline property owners to install natural erosion structures to protect their eroding shorelines as opposed to bulkheads or seawalls. In addition, a Mississippi State University doctoral project 'Site Suitability Modeling for Mobile Bay, and Mississippi Sound: A GIS and Remote Sensing Based Approach;' a $107,000 grant from the Gulf of Mexico Foundation to install living shorelines to protect a 25-acre salt marsh on Dauphin Island; and a $31,400 grant from NOAA to write a "Coastal Alabama Living Shorelines Policies, Rules, and Model Ordinance Manual" were funded.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
132	Weather and Climate

Outcome #2

1. Outcome Measures

Number of producers reporting increased income/decreased expenses based on practice changes.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Information intensive agricultural management continues to become more widely used in Mississippi and throughout the mid-south. The Delta Research and Extension Center makes data readily available for producers, as well as the larger universe of state and federal agencies, schools and universities, and corporations interested in agricultural weather information.

What has been done
Mobile weather stations have been installed on various cotton, corn, soybeans, rice, and wheat variety trials. An additional 18 mobile stations were installed in catfish ponds to monitor water temperatures for a visceral toxicosis of catfish study. Information will be part of the Delta Agriculture Weather Center Website. Mobile stations were installed in 4 areas throughout Mississippi for soybean rust research. The stations will help study rust patterns based on temperature, humidity, wind speed/direction, solar radiation, and rainfall.

Results
The information available, primarily on the interactive website (www.deltaweather.msstate.edu) has contributed greatly to the actual and potential annual savings for cotton, soybean, and rice producers. Weather stations in soybean rust studies will help scientists track patterns of soybean rust to help them get a better idea on when it occurs and to help with fungicide applications. The estimated death losses per affected pond from visceral toxicosis of catfish range from 50-100%.

The resulting loss would range from $34,125 to $68,250/affected pond. This disease is reported to have driven some producers out of business.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
132	Weather and Climate

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 24

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
112	Watershed Protection and Management	0%		7%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	20%		0%	
204	Plant Product Quality and Utility (Preharvest)	0%		16%	
401	Structures, Facilities, and General Purpose Farm Supplies	0%		10%	
402	Engineering Systems and Equipment	70%		8%	
403	Waste Disposal, Recycling, and Reuse	10%		0%	
511	New and Improved Non-Food Products and Processes	0%		43%	
601	Economics of Agricultural Production and Farm Management	0%		16%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	0.0
Actual Paid Professional	0.0	0.0	1.4	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
0	0	52188	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	7985	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	2679658	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research and extension activites will be carried out with the goal of developing biomass used for biofuels, design optimum forest products and crops for bioenergy production, and produce value-added bio-based industrial products.

2. Brief description of the target audience

Target audience will be agricultural producers and energy developers.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	20	0	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 3

Patents listed
Patent app: Esterificatoin, Acetalization and/or Ketalization to Upgrade Bio-oils to Boiler or Space heating Fuels
Patent app: Generation of Imazapic Resistance Switchgrass Population (Expt. Desgn. LL PANVI Alamo IR)
Patent app: Giant Miscanthus (Miscanthus x giganteus) Cultivar Known as MSU-MFL1

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	4	4

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of people attending workshops, short courses, etc.

Year	Actual
2011	11

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers adopting new practices due to research/extension recommendations.

Outcome #1

1. Outcome Measures

Number of producers adopting new practices due to research/extension recommendations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There is considerable interest both nationally and in Mississippi in renewable energy. In Mississippi, we have an abundance for forestry and agricultural resources available to help meet the needs of the emerging market that converts plant material (biomass) to energy. This is a developing market, and one that may help producers diversity and meet society's needs for more and better sources of energy.

What has been done
MSU participated in a USDA-funded project with LSU AgCenter personnel. The workshops described here are the culmination of an 18 month effort, and build on research results obtained during the study. Each workshop was a half-day program, with printed materials supplied in a 3-ring binder to participants. The basic workshop was tailored to address 3 separate ag producer groups; forest landowners, poultry producers, and row crop producers. We conducted 5 workshops in 2011, and each workshop was tailored to one of the 3 target audiences.

Results
More than 200 people attended one of the 5 workshops held. They received information from project personnel (MSU, LSU) as well as other MSU researchers and a representative from a new industry that will be converting wood chips to transportation fuel. At two locations we exceeded capacity, and will conduct an additional workshop in 2012 to accommodate those unable to attend the first set of workshops.

4. Associated Knowledge Areas

KA Code	Knowledge Area
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants

402 Engineering Systems and Equipment
403 Waste Disposal, Recycling, and Reuse

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MSU Extension agents and specialists, as well as MAFES faculty, used a variety of recommended methods to gather needed information. Specific strategies will be initiated and utilized for collecting evaluation information to determine program outputs and outcomes. In FY 2011, MSU Extension agents and specialists were required to submit four quarterly reports (January 5, April 5, July 5, and September 5). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. In addition, two narrative Accomplishment Reports are required from each MSU Extension employee each year. The evaluation results are a combination of this quantitative and qualitative data.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 25

1. Name of the Planned Program

Global Food Security and Hunger (not used FY11 Report)

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	0.0
Actual Paid Professional	0.0	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

2. Brief description of the target audience

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of people attending workshops, short courses, etc.

Year	Actual
2011	0

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.
2	Number of producers reporting increased revenue/decreased expenses due to practices changed.

Outcome #1

1. **Outcome Measures**

Number of producers adopting new practices based on research/extension recommendations.

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Number of producers reporting increased revenue/decreased expenses due to practices changed.

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)

Evaluation Results

This is one of the Planned Programs that we intend to consolidate in the 2013 Plan of Work.

Key Items of Evaluation