2010 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 $4,462,139 and a total Smith-Lever appropriation of $6,879,251.

During FY 2010, MSU-ES professionals (265 total FTE) carried out 99,465 educational activities with a total of 4,089,203 contacts. In FY 2010, MAFES had 760 grants awarded for a total of over $33 million.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	210.0	0.0	53.0	0.0
Actual	265.0	0.0	65.2	0.0

II. Merit Review Process

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

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

2. Brief Explanation

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

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

are selected to be reflective of the community represented, and as such reflect the diversity of race, gender and socioeconomic status of the programs' clientele.

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

In 2010, the Equine Program at Mississippi State University underwent an external review. The review panel consisted of five equine professionals who conducted an external review of the overall horse program at MSU. The team consisted of team facilitator George Phillips (current member of the Executive Board for the American Quarter Horse Association), Doyle Meadows (retired University of Tennessee Extension faculty and current TN Walking Horse show manager), and three professionals from Texas A&M University including Eleanor Green (Dean of CVMBS), Jim Heird (Equine Initiative), and Anna McNaught (Equine Initiative). The team met with faculty, staff, and Extension administration and toured facilities for two days on the MSU main campus and produced a list of strengths and weakness centered around two main questions: 1) What are we doing well? and 2) What must we do that is vital to our success?

The team found many strengths in the horse program, such as resources like the MS Horse Park, the College of Veterinary Medicine equine research program and faculty, and supportive administration. The team suggested that the equine program should engage in a strategic planning process to better identify goals, research priorities and funding. The reviewers made many other suggestions as well; for example, to increase our outreach and continuing education programs for veterinarians, to hire an Extension equine specialist, and to improve the physical appearance of equine facilities.

III. Stakeholder Input

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

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

Brief explanation.

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

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

Overall Extension Advisory Councils:
MSU-ES has an Overall Extension Advisory Council in each county. These advisory councils meet a minimum of two times per year to discuss programming efforts, evaluate programs,

legitimize program efforts, assess needs for future programming, and identify human and financial resources needed for county programming. This group includes leaders who provide input from business, social, and economic entities as well as those who represent the needs of underserved and underrepresented clientele.

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

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

Research and Extension Center Advisory Councils:
MSU has four area Research and Extension Centers (Delta, Northeast, Central, and Coastal) jointly administered by MSU-ES and MAFES. These centers each have an overall advisory council where stakeholders led discussions about programming and research efforts and assessed needs. Various subgroups of the advisory councils met several times during the year to discuss specific needs in research and extension programming.

Key Partners:
MSU-ES and MAFES met with key partners throughout the year to discuss efforts and results, coordinate activities, and set priorities. These key partners include such organizations as the Mississippi Farm Bureau, Natural Resources Conservation Service, Delta Council, Rural Development Offices, Mississippi Forestry Commission, Mississippi Department of Wildlife, Fisheries, and Parks, Mississippi Department of Agriculture and Commerce, Mississippi Consumer Education Partnership, and numerous state and regional commodity groups (Mississippi Soybean Promotion Board, Mississippi Corn Promotion Board, Mississippi Rice Promotion Board, Mississippi Peanut Promotion Board, and the Cotton Council).

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

1. Method to identify individuals and groups

- Use Advisory Committees
- Open Listening Sessions
- Needs Assessments

Brief explanation.

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

In 2010, MSU-ES administrators held eight listening sessions throughout the state to gain input and hear a diverse set of concerns about Extension programming and impending changes within MSU-ES. 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 non-traditional groups are an on-going part of the needs assessment process conducted by MSU-ES and MAFES. Surveys of traditional stakeholder groups and non-traditional groups and individuals were conducted in specific situations.

As an example, the Northeast Mississippi Research and Extension Center holds a yearly Producers Advisory Council meeting. In 2010, 293 producers attended. The producers were grouped into 14 commodity committees, which made 50 different recommendations for needed research and/or extension programming.

3. A statement of how the input will be considered

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

Brief explanation.

Stakeholder input had an influence on most aspects of this Plan of Work. Issues were identified through the needs assessment process discussed earlier. The issues helped extension agents and specialists determine their plans of action, including redirecting programs to meet clientele needs. Administration provided the resources to accomplish these changes, including setting new priorities or revising existing priorities, and hiring appropriate staff members as required to address the priorities.

Brief Explanation of what you learned from your Stakeholders

Each of our programs gain information from stakeholders that is, in turn, used to guide programming and effort. For example, the rice program at MSU-ES and MAFES underwent an external review in 2008. The reviewers indicated that the breeding program needed reorganizing. This reorganization of the rice breeding efforts was accomplished in 2010 and

is one example of how stakeholder input directly guides our joint programming effort, delivery and services.

Another example of how MSU uses stakeholder input is a Family and Consumer Science and Enterprise and Community Development program called Turning the Tide on Poverty. Residents of two Mississippi counties with high rates of poverty and significant problems as a result of poverty, took on the challenge of changing their communities from the inside out. Led by Extension agents and County Directors, volunteers facilitated study circles and formed action teams to address the most pressing needs in their community. Using no seed money, these community action teams were able to generate in-kind donations valued at $17,660 within six months and apply real-world solutions toward positive change. This example of learning from your local stakeholders and using that information to help them help themselves is an example of how Extension works with grassroot stakeholder input.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
6879251	0	4462139	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	6879251	0	4177953	0
Actual Matching	6879251	0	4247529	0
Actual All Other	0	0	19041954	0
Total Actual Expended	13758502	0	27467436	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	0	0	658281	0

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

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

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	18.0	0.0	27.6	0.0
Actual	17.6	0.0	20.7	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**
457168	0	2033168	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
457168	0	1323470	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	6305094	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	88255	247385	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	10	166	176

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	55940

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	5000	7188

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Industry seed companies regularly evaluate products in order to improve their marketability. While this method may generate information useful for contrasting performance within one specific company's genetics, comparisons to competitive genetics are quite limited. Furthermore, there is incentive for each company to conduct evaluations in a partial manner. Thus, although industry-generated genetic information is available, its value for growers to identify and select optimal genetics from within the vast market is minimal.

What has been done
The Mississippi State University Variety/Hybrid Trials are unique because they conduct annual, open, scientific-based, third-party performance evaluations of genetic performance of seed entries representing any company in the marketplace. MSU Extension Service crop specialists analyze these research results from Corn, Cotton and Soybean Variety Trials for yield performance annually to develop summaries of superior-yielding genetics expressly for various cropping cultures in Mississippi, which are published and distributed to growers. These elite genetics may also participate in MSU Extension Service Crop Demonstration Programs, which are coordinated by Extension Service Crop Specialists and supervised by Extension Area Agents and County Agricultural Agents. These programs supplement university variety trials to more thoroughly assess genetic performance under different environments and cropping systems by thoroughly evaluating plant characteristics and growth responses in grower fields.

Results
University Variety Trial and genetic evaluation efforts tremendously improves growers' ability to select superior seed genetics for their farms. These programs enhance knowledge of Extension specialists and agents who deliver findings by numerous educational activities to growers, consultants and industry personnel who directly utilize this information to improve crop

productivity. Using superior genetics improved 2010 value of soybeans (4.6 bu/a) ($11.10/bu) (2.0m acres) = $102 million; Corn (16.6 bu/a) ($4.60/bu) (0.75m acres) = $57 million; Cotton (147 lb/a) ($0.80/lb)(0.420 acres) = $49 million; Wheat (4.1 bu/a) ($4.90/bu) (0.125m acres) = $2.1 million. Thus, these activities increased raw value of these agronomic commodities over $210 million in Mississippi during 2010.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of producers increasing production levels.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	4000	8950

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The introduction of glyphosate-resistant crops (commercially known as Roundup Ready® or Roundup Ready Flex®) in 1996 revolutionized weed control. Roundup Ready® technology is now utilized on greater than 98% of all cotton, corn, and soybean acres in Mississippi. Italian ryegrass and Palmer amaranth pose a threat to crop production and profitability in Mississippi.The

estimated monetary loss from Palmer amaranth competition in Mississippi cotton and soybean in 2010 is nearly $55 million.

What has been done
Efforts are also underway to evaluate effectiveness and feasibility of future weed control programs including transgenic technology. MSU Weed Scientists and Agronomists have actively developed and published new weed control programs and strategies, and hosted field days and numerous educational events to improve glyphosate-resistant weed control in all crops. Numerous outlets have been utilized to educate all of those involved in row crop production about the presence and management of glyphosate-resistant weeds.

Results
Although glyphosate resistant technology did enhance weed control for several years, development of resistance will drastically impact our cropping systems during the coming years. Mississippi State University Research and Extension personnel are proactively addressing resistance issues so we can deliver solutions today and in the future. An estimate of the impact glyphosate-resistance weed efforts is currently at least $20 million, and will likely increase as this issue continues to develop.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of producers decreasing production inputs/expenses.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	4000	4475

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In June of 2010 soybean producers in the Delta experienced an outbreak of Grey Looper Moths, Rachiplusi ou. Outbreak populations of this pest are extremely uncommon and identification was mistaken for soybean loopers, Pseudoplusia includens, which is resistant to most insecticides and very expensive to control.

What has been done
Extension entomologist quickly collected numerous samples across the state and determined the correct species, which is extremely easy to control for less than half the cost of controlling soybean loopers.

Results
It is estimated that 150,000 acres were treated in the Delta for approximately $7.50 per acre compared with $11.50 per acre had the pest not been correctly identified and word distributed back to producers through the Mississippi Crop Situation newsletter and popular press. This is a saving of approximately $600,000.00 to the state of MS.

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	Quantitative Target	Actual

2010 2000 4003

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In August of 2010, Mississippi experienced an extreme outbreak of soybean loopers. Based on simulated defoliation research at Starkville and Stoneville in 2009 and 2010, it was determined that yield loss from defoliating insects (soybean loopers) was not significant past the R6.5-7 growth stage.

What has been done
When the looper outbreak started in August, approximately 30% of the state's 2,200,000 acres of soybean were at the R6.5 growth stage. Prior to this research producers routinely made applications later than this growth stage to protect foliage from soybean loopers. The recommendation not to treat past this point was spread rapidly through popular press and the Mississippi Crop Situation newsletter from extension entomologist.

Results
It is estimated that through dissemination of this information that 650,000 acres of soybean were saved from unnecessary treatment from soybean loopers. This is a savings of $7,150,000.00 to the state of Mississippi.

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 and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

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
301	Reproductive Performance of Animals	15%		25%	
302	Nutrient Utilization in Animals	20%		10%	
303	Genetic Improvement of Animals	20%		10%	
304	Animal Genome	5%		10%	
305	Animal Physiological Processes	10%		5%	
306	Environmental Stress in Animals	10%		20%	
307	Animal Management Systems	15%		15%	
308	Improved Animal Products (Before Harvest)	5%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	14.0	0.0	4.8	0.0
Actual	15.4	0.0	7.8	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
399991	0	781204	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
399991	0	970197	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	2187078	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	55317	104403	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	2	61	63

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	26620

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2500	5324

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many beef cattle producers in Mississippi could benefit from training in key beef production and marketing areas.

What has been done
The Mississippi Master Cattle Producer (MMCP) Program is a comprehensive training offered by MSU-ES in major beef cattle production topics. The 8-session interactive course is designed for persons interested in learning more about improving beef cattle production and marketing practices. Training focuses on improving overall management and decision-making skills and developing a broad beef cattle production knowledge base. The MMCP program was updated in 2009 with new course materials and format including online training modules that can be completed at producers own pace and schedule.

Results
To date, over 500 persons have completed this training and additional participants are currently enrolled in the program. The difference between cow-calf operations with a high level of management versus a low level of management is at least $256.20 per cow or $128.10 per acre. For every 500 participants trained through the Mississippi Master Cattle Producer Program, there is the real potential to increase total beef production net returns by over $3.8 million or approximately $960,750 annually at current enrollment rates.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals

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

Outcome #2

1. Outcome Measures

Number of producers increasing production levels.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2000	2259

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many beef calves produced in Mississippi are not managed and marketing in a manner that captures added value.

What has been done
A marketing option for feeder cattle across the state has been successfully established as a joint effort of MSU-ES and its partners. Two annual sales are conducted; these sales accommodate a large number of feeder calves and offers cattle in load-lots made up of single or multiple consignments of uniform calves. Pencil shrinks agreed to for sales capture several dollars per head that would be lost in some marketing scenarios.

Results
Since 2008, over 11,700 head of Mississippi feeder cattle have been marketed through a board sale strategy. Another 2,100 head are scheduled to be marketed in this manner in April 2011. As a result of the Mississippi Feeder Calf Board Sales, beef calf value increased by over $80 per head, and in some cases over $110 per head. This represents a conservative total impact of $4.8 million realized annually to the cow-calf sector in Mississippi for the current nearly 6,000 head

marketed annually in this manner and a potential of $400 million annually if adopted as an industry standard. The economic impact of this program is even larger when the effects of this effort on input suppliers to calf producers are considered.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of producers decreasing production inputs/expenses.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2000	2130

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Pork markets strive to deliver nutritious, safe pork products in the quantity and quality desired by consumers. In 1989, the National Pork Board developed the Pork Quality Assurance (PQA) program, a producer education and certification program. In 2007, PQA Plus was built as a continuous improvement program and it provides information to ensure producers can measure, track and continuously improve animal well-being. Currently, many swine markets require PQA Plus producer certification prior to purchasing pigs from a specific farm.

What has been done
MSU-ES has taken an active role by providing training to producers since the introduction of Pork Quality Assurance. As the program has evolved, the National Pork Board has provided training

and certification to trainers in each state so that the program will be delivered in a consistent manner to producers throughout the US. The Extension Swine Specialist has been trained and certified by the National Pork Board to train advisors and producers in PQA Plus. Five PQA Plus individual certification trainings were conducted this year.

Results

In 2010, 42 individuals received training for individual certification, and 8 production sites evaluated for site assessment status. This represents about 60% of the total swine production in Mississippi. The impact of these training have informed producers of food safety and residue avoidance issues, better management of their production and animal welfare. Mississippi markets an average of approximately 520,000 finished pigs with a gate value in excess of 50 million per year. Successful completion of the training results in producers receiving individual certification by the National Pork Board. This certification number, required by many markets prior to receiving pigs from the producer, has allowed Mississippi to market pigs without disruption.

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 #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	Quantitative Target	Actual
2010	1000	2000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

Evaluation Results

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

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.5	0.0	1.0	0.0
Actual	0.8	0.0	1.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
20016	0	96553	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
20016	0	119912	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	270313	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	3031	6153	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	7	7

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	1531

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	150	306

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	245

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

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
302	Nutrient Utilization in Animals	50%		15%	
306	Environmental Stress in Animals	15%		0%	
307	Animal Management Systems	10%		75%	
308	Improved Animal Products (Before Harvest)	25%		5%	
402	Engineering Systems and Equipment	0%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	2.0	0.0	0.7	0.0
Actual	1.1	0.0	0.4	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
28203	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
28203	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	350872	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 ttarget audience for this program includes producers of catfish, crayfish, and freshwater prawns, and related industry personnel.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1697	66	0	0

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

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	2	10	12

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	294

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	59

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Like most livestock commodities, there has been increasing interest by regulatory agencies concerning non-point source effluents. Proposed regulations would have required massive changes to the catfish production system such as collection ponds, settling basins, etc.

What has been done
A set of environmental best management practices was evaluated for catfish pond aquaculture. Simple effluent-management practices, including water-level management, limiting daily feed inputs, using a low-protein feed, and maintaining a modest fish density were evaluated in earthen ponds over 5 years.

Results
Discharge volume was reduced by 50% and pollutant discharge reduced by 60%. Groundwater use was reduced by more than 60%. These practices have become central components of environmental management practices for catfish farming and have been widely adopted by farmers.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of producers improving production efficiency.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	80	47

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Catfish feed is made primarily from grain products. Rising grain prices have increased feed costs by as much as 100% over historical averages. Due to the availability of cheap foreign imports, processors have not been able to pass these costs along to the consuming public. Therefore, farmers have not been able to raise the price of the product.

What has been done
Nutrition research evaluated the use of less expensive, alternative feed ingredients corn gluten feed and cottonseed meal as partial replacements for soybean meal and corn. A study evaluated the use of corn gluten feed and cottonseed meal to replace 25, 50, 75 and 100% soybean meal in the control diet. Levels of corn in the diets also decreased as corn gluten feed and cottonseed meal levels increased. Net yield, carcass and fillet yield, and fillet protein and fat levels decreased and feed conversion ratio increased as soybean meal replacement levels increased. A maximum of 50% of the soybean meal in channel catfish diets may be replaced by a combination of corn gluten feed and cottonseed meal (up to 20% of each in the diet) without affecting physical quality of feed pellets, fish growth, processed yield, and body composition. poor performance of diets containing high levels of corn gluten feed and cottonseed meal are the result of high fiber and/or low digestible energy.

Results
Commercial feed mills are using these results to formulate less expensive feeds for commercial farming. At current feedstuff prices, use of a combination of corn gluten feed and cottonseed meal to partially replace soybean meal and corn will reduce feed costs for catfish producers.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of producers improving their environmental stewardship.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	40	24

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Feed prices rose dramatically beginning in 2007. The USDA provided in economic assistance to Mississippi aquaculture producers who experienced high feed input costs during the 2009 calendar year. Mississippi's Farm Service Agency, along with the Mississippi Department of Agriculture and Commerce and Catfish Farmers of Mississippi, asked NWAC Extension staff to provide assistance in determining eligibility requirements and educating producers about the program.

What has been done
MSU-ES Extension Aquaculture staff provided average feed prices for the periods 2003-2007 and 2009 for catfish, tilapia, crawfish, hybrid striped bass, and prawns. A series of statewide meetings were held by NWAC Extension staff to inform Mississippi aquaculture producers concerning application deadlines, procedures, and eligibility requirements. We were also asked to conduct a statistical comparison of three separate methods of price determination.

Results
Eligible producers received a cash payment equivalent to the difference between the amount they paid per ton of catfish feed during 2009 and the average feed cost for 2003-2007. Mississippi catfish producers received $7.1 million in cash benefits from this program in December 2010. Approximately 250 people attended these two meetings. The feed cost information developed

was eventually adopted for use by several of the southeastern states as well as South Carolina and California.

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 and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Aquaculture Health

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.4	0.0	0.7	0.0
Actual	0.3	0.0	0.4	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
8061	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
8061	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	350872	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Develop diagnostic tools to detect and monitor diseases in commercially raised channel catfish and

determine virulence factors associated with those diseases.

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

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

• Use epidemiological methods to investigate new and emerging diseases, and to identify environmental and management factors that influence the onset and severity of disease outbreaks.

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

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	671	112	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	131

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	40	26

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It has been estimated that commercial catfish producers lose up to 24% of their fish each year to various causes. The USDA APHIS National Animal Health Monitoring Survey in 2003 reported that almost 73% of foodfish operations lost foodfish to diseases in 2003.

What has been done
Diagnostic services and research projects were conducted with the objective of improving production efficiencies and profitability of catfish farming. The goals of these projects were to provide diagnostic support and develop methods and technologies to diminish the impact of significant diseases affecting the profitability of catfish production. Data from all experiments were analyzed and used to make recommendation to farmers.

Results
In 2009 and 2010, the ARDL processed 1291 diagnostic cases and 2206 water samples and has initiated a VHS testing program, which was requested by producers and funded via the Mississippi Board of Animal Health. Research efforts in fish health management has lead to the development of diagnostic tools for the identification of new emerging diseases, risk assessment models to predict the occurrence of disease related losses, and fish health management practices that have increased production efficiency. Real-time PCR tests have been developed and validated for the detection of significant catfish pathogens in pond environments and fish tissues. Validated procedures have been integrated into disease surveillance and diagnostic programs and have been used to develop risk assessment models for proliferative gill disease and trematode infections.

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	Quantitative Target	Actual
2010	30	31

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

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

Evaluation Results

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

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	13.0	0.0	0.9	0.0
Actual	18.0	0.0	0.8	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
467676	0	66966	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
467676	0	15773	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	139574	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	69948	57458	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	37	37

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
2010	21234

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

Number of timber producers adopting new technologies and practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2000	4247

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Forests comprise nearly 19 million acres, nearly 70% of Mississippi?s land base. Forestry plays a significant role in the Mississippi economy, contributing an economic impact to the state of nearly $22 billion in annual economic impacts and over 189,000 jobs. Forestry is also an important income source and heritage to more than 350,000 private forest landowners. One of the biggest forestry threats is the Southern Pine Beetle, which has historically been the most damaging of all pests in Mississippi's forests.

What has been done
With funds provided by the Mississippi Forestry Commission, through the US Forest Service, MSU Extension Forestry coordinated the Mississippi Southern Pine Beetle Prevention Project. This project is part of a region wide effort to reduce the threat of a southern pine beetle outbreak on privately owned forest lands. These prevention activities are being conducted through extension educational programs and research. Three cost share programs for landowners, loggers, and foresters were also coordinated.

Results
In 2010, MSU Extension Forestry personnel conducted nearly 100 educational programs for 3,300 participants owning or managing nearly 1,000,000 acres of forest land. Topics included: southern pine beetle identification, biology and management; pine plantation thinning; prescribed burning; and forest health. Work was also conducted on four research projects: 1) Season Ips beetle response to thinning in N. Mississippi loblolly pine plantations, 2) Interactions between the Southern pine beetle (SPB) and termites in forested ecosystems, 3) Clerid beetle feeding preference during periods of endemic SPB populations, and 4) Use of remote sensing to determine activity levels of the southern pine bark beetles. The cost share program for landowners provided approximately $100,000 in funds, loggers were cost shared approximately

$25,000, and foresters were cost shared $40,000. In total, $165,000 in costs share payments reduced the threat of an SPB outbreak on 17,800 acres of Mississippi forest land.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of forest producers increasing profitability of their forest operations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1600	3397

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of producers improving their environmental stewardship.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	800	1699

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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 and Data Collection)

Evaluation Results

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%		15%	
204	Plant Product Quality and Utility (Preharvest)	15%		15%	
205	Plant Management Systems	60%		60%	
601	Economics of Agricultural Production and Farm Management	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	20.0	0.0	3.5	0.0
Actual	20.8	0.0	5.2	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
539617	0	231270	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
539617	0	321060	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	1139300	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research and extension activities designed to:

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	112034	173827	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	3	55	58

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	47644

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	5000	9529

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Electricity is a commodity that all the nearly 3 million citizens of Mississippi expect to have at their disposal. More than 8.7 million miles of right of way are established throughout Mississippi to take electricity from the generation plant to consumers. Vegetation must be managed along these rights of way. Federal and state regulatory agencies implement new regulations that must be followed to help protect our environment and threatened and endangered species against pesticide misapplication. Invasive plant species colonize along rights of way and must be managed to prevent spread onto adjacent lands.

What has been done
Activities focus on developing management strategies for vegetation on utility rights of way. This information is disseminated to utility vegetation managers and contract applicators. Regulatory changes that impact pesticide and herbicide applications are explained to managers and applicators to help protect our environment. Research and outreach has also focused on mapping and management programs for many of the invasive plant species, such as privet, cogongrass, tropical soda apple, kudzu, and Chinese tallow tree that impact rights of way and adjacent sites.

Results
Woody vegetation and brush control recommendations developed by research programs and disseminated through outreach activities help keep vegetation managers informed of new developments to extend control of undesirable vegetation on rights of way. Changes in herbicide application policies that impact these sites must be understood and followed by contractors and vegetation managers. This information is used by contractors and utility vegetation managers to economically control undesirable brush growing on rights of way to maintain the distribution of electricity to the citizens of Mississippi and ensure the highest level of safety to our environment.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of producers increasing profitability levels.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	4000	7623

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of clientele improving their environmental stewardship.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2000	3811

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The MS Department of Transportation must maintain 27,270 miles of highway with a corresponding nearly 300,000 acres of right of way. In addition, there are 53,390 miles of roads maintained by county supervisors with a little over 400,000 acres of right of way that must also be maintained. Roadside rights of way are designed to maximize motorist visibility, provide a recovery zone for vehicles, disperse water away from the road surface, and support a smooth, structurally-sound road surface.

What has been done
Activities within the weed science group at MSU-ES and MAFES focus on developing management strategies for vegetation on transportation rights of way. This information is disseminated to utility vegetation managers and contract applicators through coordinated efforts with the Mississippi Vegetation Management Association, the Mississippi Weed Control Guidelines for Mississippi, and special training sessions with herbicide suppliers, contractors, and vegetation management personnel within these organizations. Special training activities are coordinated with MDOT and county supervisors at their request due to workforce turnover.

Results
Mississippi roadside rights of way are some of the most attractive in the southeastern U. S. Low-growing grasses are preferred and maintained to prevent woody perennial plant establishment that could damage the highway surface by growing roots under the asphalt or block traffic by falling on the road surface. The result is roads, railroads, and waterways that are pleasing to motorists, safe for transportation, that are less expensive to maintain because of the lack of subsurface damage, and that provide the infrastructure necessary to deliver goods to and from Mississippi and that allow residents and tourists to see our state.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

Evaluation Results

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%		10%	
111	Conservation and Efficient Use of Water	15%		10%	
112	Watershed Protection and Management	0%		15%	
133	Pollution Prevention and Mitigation	0%		10%	
401	Structures, Facilities, and General Purpose Farm Supplies	10%		15%	
402	Engineering Systems and Equipment	15%		15%	
403	Waste Disposal, Recycling, and Reuse	15%		15%	
404	Instrumentation and Control Systems	10%		5%	
405	Drainage and Irrigation Systems and Facilities	15%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	2.0	0.0	1.5	0.0
Actual	1.9	0.0	0.3	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**
49529	0	160228	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
49529	0	23387	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	59170	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	3627	3781	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	5	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	1235

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	125	247

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi has over 1.3 million acres of irrigated cropland producing crops with a market value of more than $1.2 billion. Typically, farmers base their decision on when to irrigate on the "feel of the soil," visual stress of the crop, or when their neighbor begins to irrigate. Unfortunately, these methods may result in yield loss, under- or over-application of water, and increased pumping expenses. By properly timing irrigation of crops grown on Mississippi's clay soils, increased returns to overhead can result.

What has been done
The Mississippi Irrigation Scheduling Tool (MIST) is being developed. MIST is an automated tool that calculates soil and plant moisture needs, incorporates rainfall prediction and soil data, and generates recommendations for timing and amount of water application to simplify the irrigation decision-making process for Mississippi's crop producers.

Results
By matching irrigation applications more closely to the plant's moisture needs based on measurable characteristics, producers may realize greater yields at a lower input cost. The MIST is currently being tested and validated on Mississippi crop fields.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
401	Structures, Facilities, and General Purpose Farm Supplies

402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
405	Drainage and Irrigation Systems and Facilities

Outcome #2

1. Outcome Measures

Number of producers improving their environmental stewardship.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	198

3c. Qualitative Outcome or Impact Statement

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

What has been done
The Mississippi Waste Pesticide Disposal Program is coordinated by the Mississippi State University Extension Service, with assistance of the Mississippi Department of Agriculture and Commerce. The necessary funding required to dispose of the waste pesticide products is provided by the Mississippi Department of Environmental Quality.

Results
A total of 103 farmers in 36 Mississippi counties participated in the five events where a total of 232,122 pounds of waste pesticides were collected and properly disposed of out of state by a licensed hazardous waste contractor.In addition to the water quality and environmental benefits, the programs collectively saved participating farmers $185,600 in direct waste pesticide disposal costs that would have resulted in the absence of the program.

4. Associated Knowledge Areas

KA Code	Knowledge Area

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

Evaluation Results

The Peer Review Program is a technical assistance activity of the Mississippi State University Extension Service's public water system assistance program. The goal is to assist low performing water systems to increase their Capacity Assessment scores to acceptable levels.

Ongoing research shows that this effort is making a tremendous difference in the capacity assessment scores of the public water systems that participate. Not only have the systems undergoing a peer review outperformed the general population of systems (for those systems scoring a 3.0 or less on the capacity assessment survey) by an average of 22 percent for Fiscal Years 2003-2010, but statistical analysis has indicated that the Peer Review program itself is highly significant in helping systems achieve success and that a system that participates in the program increases its' chances by 25 percent of going from a score of 3.0 or below to a score of greater than 3.0 in the next year.

Key Items of Evaluation

Ongoing research shows that this effort is making a tremendous difference in the capacity assessment scores of the public water systems that participate in the Public Water Assistance Program.

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%		10%	
302	Nutrient Utilization in Animals	10%		45%	
305	Animal Physiological Processes	10%		10%	
306	Environmental Stress in Animals	10%		10%	
307	Animal Management Systems	10%		5%	
308	Improved Animal Products (Before Harvest)	10%		0%	
311	Animal Diseases	10%		10%	
312	External Parasites and Pests of Animals	10%		0%	
313	Internal Parasites in Animals	10%		0%	
315	Animal Welfare/Well-Being and Protection	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	0.0	2.0	0.0
Actual	1.2	0.0	2.5	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
30386	0	61676	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
30386	0	403617	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	650451	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	826	148	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	18	18

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	162

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	Quantitative Target	Actual
2010	50	32

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of producers increasing production efficiency.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	40	26

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi broiler chicken producers have a desire to reduce input costs associated with bedding material and litter disposal. In-house composting of litter between flocks has been studied as a method of reducing litter microbial populations when litter is de-caked and then re-used for contiguous production cycles. An accurate estimate of the heating profile in windrow broiler litter is necessary to determine the extent of microbe-reducing temperatures in the windrow.

What has been done
ABE faculty, in cooperation with Poultry Science and USDA-ARS collaborators, coordinated and conducted research trials to determine what portion of an in-house broiler litter windrow achieved microbe-reducing temperatures during in-house composting.

Results
The research results indicated that approximately 80% of the cross-sectional area of the windrow piles reached one time-temperature benchmark (50°C for 24 h) for effective microbial reduction. The results are being prepared for publication in refereed journals and Extension fact sheets and will help broiler producers make litter management decisions.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals

307	Animal Management Systems
311	Animal Diseases
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals
315	Animal Welfare/Well-Being and Protection

Outcome #3

1. Outcome Measures

Number of producers reducing the environmental impact of production.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	40	13

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

Evaluation Results

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

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	7.0	0.0	0.5	0.0
Actual	9.5	0.0	1.5	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
246698	0	201297	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
246698	0	15135	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	152624	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	37616	16034	0	0

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

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	3	31	34

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	8942

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	Quantitative Target	Actual
2010	800	1788

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Demand for natural resource products, services, and recreational access on private land is increasing significantly. Most (90%) of Mississippi's natural resources are on privately owned land. These lands have great potential for recreational enterprises for Mississippi, which has opportunity to enhance economic returns. Natural resources recreation generates over $2.7 billion annually, and supports over 71,435 jobs in MS. The economic impact can be increased significantly with implementation of research and delivery of educational programs to cultivate tourism opportunities and diversify incomes.

What has been done
An integrated extension-research program was developed to promote a sustainable/profitable conservation ethic. This program has four components 1) interdisciplinary research program, 2) monitoring system to evaluate economic impact to rural communities, 3) comprehensive educational curricula and training materials, and 4) suite of successful integrated wildlife-forest-agricultural business strategies to further promote rural development and farm incomes.

Results
Natural Resources Enterprises staff conducts 8-10 workshops annually, have sponsored 46 invited events since its inception, and has trained over 3,000 landowners with a potential positive impact to over 2 million acres. Natural Resources Enterprises workshop attendees reported they expect to earn $20,000 in additional annual income ($11.58/acre) from properties as a result of the workshop,with 85% of attendees planning to implement enterprises and conservation. Seven states and 2 countries (Sweden and Spain) have requested NRE workshops to be co-hosted by Natural Resources Enterprises staff to further sustainable wildlife management on private lands on their states/countries. In 2010 alone, the Natural Resources Enterprises website had 21,171 unique users from 139 countries.

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	Quantitative Target	Actual
2010	100	1431

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
605	Natural Resource and Environmental Economics
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	Quantitative Target	Actual
2010	320	715

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	200	415

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

Evaluation Results

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%		80%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	20%		20%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	11.0	0.0	0.0	0.0
Actual	14.6	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
379137	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
379137	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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	35313	20653	0	0

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

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	13	0	13

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	9328

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3400	1866

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The number of working women has risen in all age groups in Mississippi.
These and other factors suggest the demand for childcare services will continue to grow and be strong. Census statistics illustrate that parents with infants to 5-years old or older, dual-income families and single-parent households, and families earning less than $45,000 represent a growing market for child care in Mississippi. The preschool population in Mississippi is rising, up 9,510 children from 195,120 in 19900 to 204,630 in 2000 with a significant number of these children needing child care.

What has been done
To help meet the growing need for child care in Mississippi, Extension Specialists collaborated to provide educational training and technical assistance to existing child care providers and individuals wanting to open a child care facility. In 2010, MSU-ES hosted about 110 training sessions via distance education on various topics related child care development and readiness.

Results
C&ED Specialists have directly worked with six operators on financial analysis, management, and business startup. In these technical sessions specialists visit on-site with the operators performing in-depth analysis of their operations looking for cost cutting measures, business startup, financing, etc. From these sessions, two childcare centers were formed, totaling more than $ 225,000 in local investments and providing services to more than 150 children in these communities. In 2011, one these centers expanded their operations by purchasing an existing facility in another town 40 miles away. The owner is investing more than $100,000 in the facility to add more space, parking, and other services at the center. Because of the assessments, evaluations, and interactions with owners and operators of these facilities, C&ED specialists developed a list of strategies that other operators might use to improve finance and operation in

their child care centers.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of care providers maintaining certification requirements.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2720	746

3c. Qualitative Outcome or Impact Statement

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

What has been done
The Nurturing Homes Initiative (NHI) provides educational information, training and technical assistance to in-home care providers who offer full-day, full-year childcare services to children. The program uses a Family Day Care Rating Scale (FDCRS) to assess the quality of childcare provided by the in-home providers. NHI training coordinators utilize materials, one-on-one technical assistance, and interaction to provide training that is tailored to each provider?s specific needs.

Results

Nurturing Homes Initiative was conducted in 45 counties with 100 in-home child care providers. 6 Field Staff Technical Assistants conducted personalized technical assistance. Of the 100 providers on whom posttest data were collected, all improved. All of the participating providers improved at least one rating point or to the score of 4.0-4.5 on the Family Day Care Rating Scale. Results of the Arnett Caregiver Interaction Scale show that one hundred percent (100%) of the participating providers demonstrated positive and appropriate interactions with their children.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of care providers increasing the quality of care provided.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1360	1492

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Current government regulations permit the educational levels of non-Head Start early care and education providers to be minimal, creating a disparity in the quality of care provided to infants, toddlers, and pre-school age children. To improve the quality of care for Mississippi?s most vulnerable population, we must maintain a rigorous training system with numerous opportunities for face-to-face training, distance training, and personal technical assistance. This ensures the two-fold gain of increased school readiness for young children and improved capacity of the early childhood workforce.

What has been done
MSU developed partnerships to increase the number of Mississippi Child Care Resource & Referral sites from the original three to twelve. The sites provide a wide array of materials, supplies, equipment, and services to parents, early care and education providers, students, child

development centers. We developed a site at the Pearl Parent and Teacher Community Resource Center in addition to our site at the Center for Families and Children in Petal. The Mid-Jackson Family Resource Center was agreed upon in 2009 and opened in 2010.

Results

Twelve 'bricks and mortar' sites and one Mobile Resource & Referral serve all 82 counties in Mississippi. In the 2009 calendar year the MSCCR&R Network presented 574 training workshops, a 31.1% increase over 2008. These workshops were attended by 18,223 participants, a 36.6% increase over 2008. As word of our services spread, our site visits increased 142%, from 1,583 in 2008 to 3,833 visits in 2009. 6,977 educational items were checked out from the Resource & Referral offices (+47.3%). 902 hours of technical assistance were provided to 30 child care centers. 55 child care referrals were made. Expanding the training and educational opportunities for early care and education providers will increase the quality of current child care programs throughout the state, supporting the Quality Rating System established by the Mississippi Department of Human Services.

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 and Data Collection)

Evaluation Results

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

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	2.0	0.0
Actual	6.3	0.0	1.9	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
164261	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
164261	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	983500	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.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	34341	23595	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	3	4

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	9656

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

Number of clientele adopting new practices related to financial management.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2000	1931

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to U.S. Census (2008), Mississippi is the poorest state in the nation, ranking first for individuals living in poverty, and 50th among states for per capita income ($30,399). Although the poverty rate has increased nationwide as the U.S. recession intensified, the South experienced the biggest jump in poverty, and Mississippians with an average household income of just $35,693 were hit especially hard. The challenges local residents in communities overwhelmed by poverty face are monumental and across the board -- economic, educational, social, historical, cultural, and more.

What has been done
MSU-ES Educators joined a multi-state project, Turning the Tide on Poverty, sponsored by the Southern Rural Development Center (SRDC). Two pilot counties in Mississippi were selected for the pilot project: Lauderdale and Neshoba County. Community members were recruited to seek 'place-based' solutions to poverty based on local ideas, talents and concerns. Local leaders from diverse groups recruit and train facilitators for five-week Study Circles (intense discussion groups) where community members explored issues before finalizing community action plans. MSU-ES worked closely with community members to form core planning groups who would plan and implement Turning the Tide on Poverty events in each community.

Results
Efforts made by ten action teams are improving lives of families already, and beginning to "Turn the Tide on Poverty." Community action teams were given no seed money to begin projects, yet generated in-kind donations and sweat equity valued at $17,660 within just six months. Home gardens, food networks, and farmer?s markets have been established. A new youth service club is being organized in Lauderdale County. A community resource guide has been updated to include Choctaw Tribal Service agencies and will be made available online. Wal-Mart was

returning food resources valued at over $1000.00 a week to their distribution centers. As a result of months of study and meeting with parents, the community members have learned that low income and low education levels on the part of the parents do not equal that for the children.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #2

1. Outcome Measures

Number of clientele reducing debt.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1600	1545

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Financial literacy, and helping high schools students understand responsible choices in their future lifestyle can change the lives of individuals and communities. The 2008 Financial Literacy Survey for High School Students conducted by the National Jump$tart Coalition for Personal Financial Literacy demonstrated the need for personal finance in schools. The average score on the 2008 financial test survey was 48.3 (out of a possible score of 100%), lower than the 2006 survey score of 52.4.

What has been done
Family Resource Management (FRM) Area Extension Agents statewide have conducted "Welcome to the Real World" lifeskills 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 7 through college. The hands-on activity teaches the student about financial obligations faced as adults in the real world. During the past five years, over 34,000 students in Mississippi have been reached with the growing program, more than 11,000 of those in the past year.

Results

Over 95% of those participants responding to surveys at the end of the program replied "yes" when asked if the program will help them in the future. In one typical session, Fifty-nine percent (59.9%) indicated they plan to get more education after high school and fifty (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 MSU's Welcome to the Real World Program

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #3

1. Outcome Measures

Number of clientele increasing wealth.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	800	772

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Programmatic Challenges

Brief Explanation

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

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Human Health

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	9.0	0.0	1.0	0.0
Actual	5.4	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
139692	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
139692	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.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	84148	126113	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	35044

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

Number of clientele reporting changes in lifestyle to improve health.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	4500	7009

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 to obtain more effective treatment with fewer side effects. 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
MSU Extension Service has established partnership with churches and women ministry to implement breast cancer symposiums. The symposiums 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 (CBE) as part of their regular health exam by a health professional. Breast self exam (BSE) 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 breast. If there are any changes occur in the breast, they can inform their health professional right away.

Results
The health symposiums had 138 individuals in attendance. This also includes males that attended the symposiums. Evaluations indicated that they have had screening for breast cancer based on American Cancer Society recommendation. The information obtained from the symposiums they plan to share with their families, friends, and other women in the community. The majority indicated that early detection is the key for better health.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3600	5607

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Overweight and obesity have dominated the news as a public health epidemic in our nation. Lasting changes in eating and physical activity behaviors require education for the individual and family as well as changes to the physical environment and social system to support positive lifestyle habits. Consumer demand for user-friendly information they can trust on healthy eating and physical activity for themselves and their family is at an all time high.

What has been done
Mississippi In Motion is a program with the goal to improve the health of Mississippi residents, through key prevention strategies: increased physical activity and improved nutrition. Positive behavior change is encouraged through the use of social support and self-efficacy. Participants are encouraged to eat 5 to 9 serving sizes of fruits and vegetables a day and to follow the USDA MyPyramid guidelines. Participants are also asked to participate in 30 minutes of some type of physical activity on a daily basis.

Results
From January 2010 to the end of the May 2011, over 1406 had participated in Mississippi In Motion with 4,876 attendees in the weekly educational sessions. Results of participants completing the pre-post surveys (N=664) indicated significant ($p<.01$) significant decreases in pre-post BMI, blood pressure (systolic & diastolic) body weight ($p<.05$), and significant ($p<.01$) increases in fruit and vegetable intake, water intake, and physical activity. Of the participants that actually lost weight (N=470) the average weight loss was 7.01. A total of 3,294 lbs were lost

among the participants.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Other (Cultural traditions)

Brief Explanation

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

Evaluation Results

Working with partners, MSU-ES has played a vital role with the USDA eXtension Families Food and Fitness Communities of Practice. The Families Food and Fitness CoP has a Facebook Page that is linked to a Twitter account. The Facebook Page has over 700 fans and the FFF CoP is being followed by over 700 people on Twitter. The links take people directly into the site and this is provided to everyone in the country where people can ask "frequently asked questions," find articles, participate in an interactive learning environment, and find lessons ready to go, focused on six key healthy behaviors.

On average in 2010, 48.1% found the six behaviors on the FFF website to be extremely useful. 34.8% found the behavior resource areas to be useful. Based on something learned on the "Families, Food and Fitness" page, participants indicated the following: 50% lost weight, 35.09% lost inches, 58.77% started exercising more, 71.05% improved their diet, 57.02% stated they ate less. Participants taking the survey were from states across the country including a large percentage of participants from Mississippi that also participated in "Mississippi In Motion."

Key Items of Evaluation

Based on something learned on the "Families, Food and Fitness" page, participants indicated the following: 50% lost weight, 35.09% lost inches, 58.77% started exercising more, 71.05% improved their diet, 57.02% stated they ate less.

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Human Nutrition/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
205	Plant Management Systems	0%		5%	
303	Genetic Improvement of Animals	0%		5%	
502	New and Improved Food Products	0%		5%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		5%	
703	Nutrition Education and Behavior	100%		20%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%		50%	
801	Individual and Family Resource Management	0%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	17.5	0.0	1.0	0.0
Actual	18.7	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
484270	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
484270	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 will 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 health-based research.

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.Food safety programming focuses on producers, processors, government regulators, food handlers, food retailers, and consumers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	200970	309971	318203	490787

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

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	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
2010	219989

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 improvements in food preparation techniques.
4	Number of clientele reporting improved health and/or well-being due to changes in diet.
5	Reduce the incidence of reported food-borne illnesses.

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	18000	43997

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	14400	43997

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi remained the most obese state for the sixth year in a row. Mississippi's adult obesity rate is 33.8 percent. Adults earning less than $15,000 per year had an obesity rate of 35.3 percent while adults earning $50,000 or more per year had a lesser obesity rate of 24.5 percent. Among Mississippi's youth population, 21.9 percent aged 10-17 are obese based on the 2009 F as in Fat Report from Trust for America?s Health. Mississippi rates first out of all other states for childhood obesity.

What has been done
Mississippi's Family Nutrition Program provides nutrition education to people who are eligible to receive benefits through Supplemental Nutrition Assistance Program (SNAP-Ed). FNP's nutrition education programs are conducted at public schools (that have 50% or more of the students participating in free and reduced lunch programs), WIC Centers, Department of Human Services offices, Housing Authorities, and other venues to connect with people who are eligible to receive SNAP. For FY2010, there were 140,849 participants in the FNP programs with 127,349 of those being children (ages 5-17).

Results
Example increases: Of 3813 participants surveyed in grades 3-6, there was a 14.43% increase in the number of participants who reported they always drink milk or eat cheese at least three times a day, a 13.53% increase in the number of participants who reported they always eat different kinds of fruit every day, and a 6.5% % increase in the number of participants who reported they always eat different kinds of vegetables every day. Of 328 participants surveyed in grades 7-12, there was a 45.3% increase in the number of participants who reported they always drink milk or eat cheese at least three times a day, a 13.53% increase in the number of participants who reported they always eat fruits or drink 100% fruit juice twice a day, and a 43% increase in the number of participants who reported they always eat vegetables every day.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #3

1. Outcome Measures

Number of clientele reporting improvements in food preparation techniques.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	7200	35197

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many organizations are still working on the Gulf Coast to help people with housing even 5 years after Katrina. One of those organizations is Mercy Housing and Human Development in Gulfport. They have many clients from Habitat for Humanity that need home ownership education, money management etc. They requested us to help them with these clients.

What has been done
MSU-ES has helped provide 3 sessions using our 'Nutrition Sense' curriculum and expanding it to 7 lessons that also include hands on cooking lessons, visits to the supermarket to read labels and even a home cooked Thanksgiving dinner. 'Nutrition Sense' program main goal is to teach people to eat healthier and smarter by learning how to use their food dollars wisely. They learn how to stretch their food dollar and how to create a personal spending plan, and to buy, store and cook their food safely. In addition, we teach them how to navigate the grocery store to get the best for their money.

Results
We have had three classes with 12-15 persons per class. We are planning two more classes this year and are glad that Mercy Housing is in their new building complete with a full size kitchen. 98% of these clients are now in their own Habitat for Humanity home. Evaluations from the class show that they learned more about how to manage their money for food and that they can eat healthy even on a budget.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and

Naturally Occurring Toxins

Outcome #4

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	7200	17599

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi ranks first in the United States with respect to percentage of persons suffering from diabetes. According to the 2011 National Diabetes Fact Sheet (released 1/26/2011) currently 25.8 million adults and children nationwide have diabetes. In addition to diagnosed and undiagnosed cases of diabetes, there are 79 million people with prediabetes. Diabetes is also a major cause of heart disease and stroke and is the seventh leading cause of death in the United States. In 2007, the estimated total diabetes cost in the United States, both direct and indirect, was $174 billion dollars.

What has been done
MSU-ES, in partnership with Mississippi Homemaker Volunteers, developed a presentation entitled "Meal Planning for Diabetics" to provide basic diabetic information and nutrition related issues. The program is designed to be part instruction, part demonstration, and part application with participants learning to prepare foods that could easily be inserted into a diabetic meal plan. This gives FCS agents a training aid which specifically targets newly diagnosed diabetics and their caregivers to improve self-efficacy and confidence regarding their care and management of diabetes.

Results
The presentation was first provided during the 2010 Mississippi Homemakers Volunteer Annual Conference as a four-hour session. Attendees were introduced to information regarding diabetes and its complications. Different nutrition/meal planning strategies including carbohydrate counting, the Healthy Diabetes Plate, and diabetic exchange lists were discussed. The second half of the session was devoted to actually preparing recipes specifically developed for diabetics. Individuals were divided into groups and prepared foods that focused on different food groups, including

fruits and vegetables, combination dishes/entrees, and desserts. Initially, the attendees were concerned about their skills in food preparation; however the also felt that actual application improved their confidence in preparing foods for themselves and their families.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #5

1. Outcome Measures

Reduce the incidence of reported food-borne illnesses.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

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

Evaluation Results

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%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	9.5	0.0	0.0	0.0
Actual	8.2	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
212293	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
212293	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.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	36050	40091	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	12690

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

Outcome #1

1. Outcome Measures

Number of clientele who improve their leadership skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3400	3553

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 organization to contribute to making them better leaders.

What has been done
The Leadership Development Agents have conducted trainings for olunteers, members of civic organizations, local and state government officials, community leaders, decision makers, agencies, and agents of social services. They have taught these groups various aspects of leadership.

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
805	Community Institutions, Health, and Social Services

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2720	2134

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Due to the poor economic status and job layoffs today, more and more agencies, hospitals, domestic violence groups, and families need assistance in providing services, donations, donated items and monetary gifts. 222 MHV Clubs in Mississippi strive to strengthen and improve our families, communities, state, and country through continuing education so they can serve all people. Leadership Development provides the training for the members of MS Homemaker Volunteers who in turn train their club members.

What has been done
Mississippi Homemaker Volunteer clubs sign up to make or provide items to the Blair Children's Hospital (a total of 821 blankets, 1128 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, 1321 tote bags, and many other items). The Leadership Agents provide a MHV State Handbook, a County Yearbook, numerous educational materials and programs, and many community service projects which assist the 2,134 members to accomplish their vision.

Results
The MHV contributed 344,656 volunteer hours with projects and volunteer work to help Mississippi Residents with a value of $7,186,077.60. The 2134 MHV members receive vast amounts of information to assist the MHV in improving their lives as well as with the ability to help train and educate others. The 222 MHV clubs receive approximately 600 Leader Trainings statewide who 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 and Data Collection)

Evaluation Results

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%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	4.5	0.0	0.0	0.0
Actual	3.9	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
101854	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
101854	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

2. Brief description of the target audience

The target audience for this program includes all Mississippi families.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	18070	29663	0	0

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

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	7956

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

Outcome #1

1. Outcome Measures

Number of families adopting recommended family strategies and behaviors.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1100	1591

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Neshboa Baptist Center serves more than 80 limited resource families each week giving most canned food items. With rising
unemployment in the county peaking at 11%, the number of families needing food items increased while local food donations had
decreased. The staff at the center wanted to improve the variety and the nutritional value of items given to limited resource families.

What has been done
Volunteers working with Extension staff in the Turning the Tide on poverty projet studied issues affecting local poverty for 5 weeks.
They contacted Wal-art managers to find out where surplus foods went. The store had been shipping surplus foods and items about
to reach expiration dates back to their distribution center. The local store began shipping surplus items to the center. The Extension staff assisted with nutritional informational to help improve the selection of healthier foods given to limited resource families.

Results
The limited resource families now get fresh shell eggs, multi-grain bread, fruits and vegetables, canned salmon, and frozen beef. The
volunteers no longer worry about rationing canned food items. The surplus foods from Wal-Mart has kept needed resources valued at
approximately $1000.00 weekly in the county. With the increase in available food items, the volunteers are now planning an outreach
project to take food boxes to senior citizens unable to travel to the center.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of families reporting improved strengthened family life.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	880	1273

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Programmatic Challenges

Brief Explanation

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

Evaluation Results

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

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	3.5	0.0	0.2	0.0
Actual	5.6	0.0	6.0	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**
146017	0	109450	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
146017	0	152918	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	1851006	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

- Urban entomology and plant pathology
- Plant disease and nematode diagnostics
- Cotton pest management
- Greenhouse tomato pest management
- Soybean management by application of research and technology

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	61430	11251	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	58	58

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	12114

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

Number of producers adopting IPM production practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	800	2423

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Currently only 50% of field corn acres in MS can be planted to varieties expressing Bt toxin to control southwestern corn borers (SWCB). On the remaining 50% of acres not expressing Bt toxin foliar insecticides must be used to control this pest. Scouting for SWCB is extremely difficult and reliance of pheromone traps has proven to be the most effective means of management for this pest. However, most producers do not have access or are not familiar with pheromone traps. Producers have been relying on automatic applications at tassel to control this pest which may not be needed if no SWCB are present. This leads to unneeded insecticide application on many acres throughout the state.

What has been done
The state-wide southwestern corn borer trapping program uses pheromone traps to monitor populations of southwestern corn borers in 48 counties across the state through specialist, county, and area extension agents. These data are sent out weekly to producers through the Mississippi Crop Situation newsletter to alert growers if this pest is at treatable levels in non-Bt corn.

Results
It is estimated that approximately 50% of the 750,000 acres of corn is non-Bt. Of the 375,000 acres of non-Bt corn susceptible to corn borers approximately 100,000 acres were treated for corn borers. Based on average response to treatment of 10 bushels per acre, Mississippi corn producers saved $4.6 million of potential lost revenue from this pest and saved $3.3 million by avoiding unnecessary pesticide applications. A total of $7.9 million was returned to the state of Mississippi through Extension service efforts.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of producers increasing profits.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	640	1938

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In recent years soybean producers in Mississippi have had no viable option of controlling below ground insect pests in soybeans.

What has been done
Over the last 5 years Extension entomologists have researched and demonstrated the effects of insecticide seed treatments in over 30 replicated small plot and large plot trials in Mississippi.

Results
Six years ago less than one percent of producers utilized insecticide seed treatments (ISTs) on soybean. By 2010, 75% percent of producers had adopted insecticide seed treatments on soybeans in Mississippi. Research has shown a 2.5 - 3.8 bushel response from use of ISTs. Extension entomologists have broadly distributed these findings through popular press, news paper, radio spots, and newsletters. In 2010, Mississippi producers grew 2 million acres of

soybeans. If assuming only 2.5 bu/a response at $11.10 per bushel on 75% of soybeans grown, this is a benefit of $42 million to Mississippi soybean producers.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of producers reducing environmental impacts of pesticide use.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	640	969

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Tarnished plant bug is one of the most destructive pests in cotton in Mississippi. In 2010, producers in the Mississippi Delta averaged 6 applications for this pest alone. Economic losses from tarnished plant bug were estimated at $24,284,000.00.

What has been done
The Extension Entomology has shown that a single application of an insect growth regulator (Diamond) applied between the third week of squaring and first bloom has protected from 100-300 lbs of lint in demonstration and research trials over the last several years. The extension entomology program made an increased effort to inform growers of these findings through popular press, county meetings, newsletters, and direct contact.

Results
It is estimated that of the 420,000 acres of cotton in Mississippi, producers adopted this practice on 150,000 acres in 2010. Using the most conservative response of 100 lbs of lint per acre, Mississippi producers protected $12,750,000.00 of profit.

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

{No Data Entered}

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

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 18

1. Name of the Planned Program

Agribusiness/Risk Farm Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	1.0	0.0
Actual	1.4	0.0	4.0	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
36214	0	118017	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
36214	0	464871	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	597645	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

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

The Extension Agricultural Marketing Information and Education area provides producers of major row crops, cattle, milk and dairy products, catfish, fruits and vegetables, and horticultural crops with regular, timely updates on conditions in these commodity markets. In addition, training will be made available on the use of commonly used marketing tools and strategies.

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

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5065	7597	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	29	29

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	2110

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	500	422

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In 2011, USDA is predicted to provide $12.4 billion in risk protection for farmers, including $7.78 billion in the form of crop insurance subsidies. Crop insurance requires premiums payment from producer. Failure to accurately rate crop insurance premiums can lead to pricing farmers out of the market for legitimate risk protection or undercharging other producers and giving an unintended advantage to some producers relative to others.

What has been done
After assessing rating practices of USDA, we systematically began analysis that would result in more accurate crop insurance rates. A journal sample of specific issues addressed includes: Developing a method to rate area yield insurance that more accurately accounts for yield trends and evolution of yield risk over time (Harri, A, K.H. Coble, A. Ker, B.K. Goodwin, American Journal of Agricultural Economics, forthcoming); Improved tests for normality in limited data series (Harri, A, and K.H. Coble, Journal of Applied Statistics, forthcoming, and Harri, A., C. Erdem, K.H. Coble, T.O. Knight., Review of Agricultural Economics, 2009); New approaches to set the crop insurance reference yield (Rejesus, R.M., B.K. Goodwin, K.H. Coble, and T.O. Knight, Agricultural Finance Review, 2010) and more.

Results
In 2010, approximately $4.2 billion of area insurance liability was rated with our proposed method to rate the Group Risk Plan of insurance. However our largest impact has been on the $67 billion of individual-coverage insurance lsability. Our work has modified 96% of all U.S. crop insurance premiums. Our work is also anticipating the next farm bill by analyzing designs likely to be considered by policy makers and has been used by the Congressional Budget Office to score legislation. With the introduction of the new "combo" suite of insurance designs we have increasingly used our models to inform producer groups of how to evaluate and participate in crop

insurance programs. This has lead to expanded extension programs and increased training opportunities as we have worked with grower groups at a state and national level.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	400	338

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Consumers are placing greater emphasis on where and how food is produced and processed. The consuming public perceives local production and processing of food as a safer food. In marketing, small and medium sized producers and processors are at a disadvantage when competing for market share with large national and multi-national firms. Generally large firms have more financial resources available for market research and promotion. The majority of Mississippi food producers and processors are considered small to medium size.

What has been done
The MSU Extension Service helped establish the Mississippi MarketMaker program to assist Mississippi producers, processors, and consumers locate markets and products. MarketMaker is an interactive food marketing website which contains demographic and business data that the user can query. Details can be summarized on a map to show concentrations of consumer markets or strategic partners. The MSU Extension Service has conducted over 40 training workshops for producers, processors and consumers on the benefits and use of MarketMaker as a direct marketing tool.

Results
The monthly website hits for the Mississippi site increased from ~28,000 to ~55,000 in February, 2010 alone. Producers are able to locate more direct markets and community markets are able to find and recruit growers. Farmers Markets in Mississippi have grown from 28 certified markets to 60 certified markets since 2007. With the growth in local food supply, Wal-Mart acknowledged MarketMaker in 2009 as a source for their produce buyers to locate local producers. Fruit and vegetable growers in Mississippi have begun to supply several local Wal-Mart stores with blueberries and other produce. Small and medium sized producers and processors now have a direct marketing tool that gives them more exposure and access to markets without prohibitive marketing costs.

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 and Data Collection)

Evaluation Results

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 professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	62.5	0.0	0.0	0.0
Actual	90.9	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
2360054	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
2360054	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

- 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
- 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.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	127272	130186	296969	303767

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	6	0	6

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth enrolled in 4-H Clubs.

Year **Actual**

2010	22364

Output #2

Output Measure

- Number of clubs operating on military bases.

Year	Actual
2010	5

Output #3

Output Measure

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

Year	Actual
2010	550

Output #4

Output Measure

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

Year	Actual
2010	2000

Output #5

Output Measure

- Number of volunteers attending state volunteer leaders conference.

Year	Actual
2010	245

Output #6

Output Measure

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

Year	Actual
2010	45

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	300	1500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	200	1300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #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	Quantitative Target	Actual
2010	200	600

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 7,917 youth and adult volunteer leaders working directly and indirectly with Mississipp 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 $26,000,000.

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	Quantitative Target	Actual
2010	14500	16498

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Local communities are strengthened through youth who are committed to positive actions that improved the quality of life within their locale. 4-H membership in Mississippi has a target goal of increased retention of 4-H members through the high school years. These youth mirror the race-diversity of the state. All Mississippi counties have a 4-H membership.

What has been done
In 2010, 4-H membership at the high school level increased by 4,034 teens from ninth grade to senior level. This can be attributed to a teen leadership model where youth are empowered to be community leaders, teen-teachers and mentors. Assessment of life-skills increased include: communication, technology skill attainment, team-work, responsibility and leadership skills

gained.

Results
Yearly program delivery cost per 4-H contact is $11.22 per contact in contrast to the cost in Mississippi of youth juvenile detention is $20,528.95 per youth. 40% of the children who go to juvenile detention drop out of high school, this is a tremendous economic impact to the state of Mississippi. 4-H youth are 1.6 times more likely to have grades of B or above, are 1.4 times more likely to have high academic competence, are 1.5 times more likely to be engaged in high school organizations and activities and are 1.8 times more likely to go to college. When compared to other youth, young people involved in 4-H are: More likely to spend more time exercising or being physically active; Two times less likely to engage in drug use; Two times less likely to use cigarettes or drink alcohol.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #5

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	14500	14024

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
ATV accidents are serious and preventable. Many youth are injured each year from a lack of knowledge of safety precautions around all-terrain vehicles.

What has been done
In 2010, Mississippi 4-H was able to promote RiderCourse through a program entitled Progressive Farm Safety Camps. More than 2,500 youth and adults learned about the proper ATV safety gear and riding technics as related to all terrain vehicles. The Mississippi 4-H program offers a ASI certified ATV RiderCourse ATV Safety and obtained grant funding for eight ATV units

used with the RiderCourse program located on property owned by the Mississippi 4-H Foundation.

Results

The ATV Safety program is making a huge impact in Mississippi. Dealerships are requesting the training. Federal agencies are sending professional staff through 4-H instructional courses. Dealerships are promoting the 4-H RiderCourse program. The RiderCourse is making parents and youth more conscious of being a safer ATV operator. More than 71% of the program participants increased their knowledge of the importance of safety gear. Over 69% of the participants stated that they would use proper riding techniques. Mississippi Forestry Commission/Service has requested RiderCourse. A Mississippi Law passed in 2011, stated that all youth who are licensed to use ATVs must complete a safety course provided by the Mississippi State University Extension Service 4-H Department.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6

1. Outcome Measures

Number of 4-H projects completed.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	8000	8249

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area

806 Youth Development

Outcome #7

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	4000	8249

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many youth in Mississippi lack funds to attend college after graduating from high school.

What has been done
The Dixie National Sale of Junior Champions provides an opportunity for market animals to be sold by auction. Exhibitors receive 80% of the sale price that can be used for their education. 4-H?ers whose livestock project qualify can use the money acquired from the sale of their animals for use toward college expenses. In addition, $50,500 in scholarships is awarded to other youth.

Results
A total of 43 youth qualified for the Dixie National Sale of Junior Champions that totaled $257,162.50, plus the $50,500 in scholarships that went to 33 exhibitors.

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 and Data Collection)

Evaluation Results

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
608	Community Resource Planning and Development	25%		10%	
609	Economic Theory and Methods	25%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	25%		35%	
805	Community Institutions, Health, and Social Services	25%		30%	
903	Communication, Education, and Information Delivery	0%		25%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.0	1.5	0.0
Actual	16.1	0.0	0.6	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
417972	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
417972	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	330476	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 profilesDevelopment of economic analyses (eg., feasibility, impact, export-base, business plans, commuting, trade, shift share, location quotients); Providing technical assistance; Holding community forums; Taking strategic planning surveys (e.g., market assessment, customer satisfaction, hospitality, health); Developing market strategies; Conducting strategic planning workshops; Publishing a directory of local services; Developing quantitative profiles of health organizations; Conducting feasibility studies; Producing gap analyses; Promoting coalition building trainings; Conducting tourism development workshops; Providing customer service/hospitality trainings; Conducting leadership development workshops; Provide technical assistance to counties and municipalities in such areas as general management, financial administration, personnel administration, leadership development, economic development, community facilities and services, and solid waste management.

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	74791	80994	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	7	8

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	25964

Output #2

Output Measure

- Number of communities requesting economic analyses.

Year	Actual
2010	32

Output #3

Output Measure

- Number of communities participating in community health improvement activities.

Year	Actual
2010	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	Quantitative Target	Actual
2010	8200	4154

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3550	5193

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of local government officials obtaining required certifications.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	4800	7136

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #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	Quantitative Target	Actual
2010	20	34

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers markets represent one of several direct marketing channels available to small producers and consumers in Mississippi. Farmers Markets across the state continue to open as more and

more interest in having locally grown produce. Farmers Markets in Mississippi have grown 114 percent from 28 markets in 2007 to 60 markets in 2011 (MDAC). Trends in farmers markets and sales can help assess the potential role of such channels in agricultural development in rural communities.

What has been done

The MSU Agricultural Economics Department and Extension C&ED continue to offer assistance with organizing and operating Farmers Markets in the state. C&ED Specialists have assisted several communities in evaluating opportunities for direct marketing of locally grown foods in Mississippi. Extension, working with local government officials in Holmes County, developed a farmers? market to meet the demand for locally grown produce. A major driver in this project was involving a local minority growers? cooperative which has been in existence for more than 10 years. Extension helped the Alcorn County Board of Supervisors (or County Commissioners in some states) evaluate the feasibility of developing a second farmers market in the county. An analysis was performed of this option and a report and presentation was made to county officials on the viability of the second facility. C&ED specialists are in the early stages of helping a Choctaw County assess the demand and support among growers of a farmers? market in the county. Extension C&ED Specialists provided a survey instrument for the county to use in collecting consumer and producer information about this proposal. Extension C&ED will analyze the survey and develop a feasibility analysis using the results for local officials.

Results

Communities benefit from farmers markets with more money spent on fresh fruits and vegetables in the local economy. These facilities also promote business development and expansion in the local area; provide producers with an alternative to row cropping; and provide consumers with better products. These impacts were confirmed in a September 2009 study of farmers markets. The MSU results revealed that 446 producers sold produce at the 26 farmers markets surveyed. Total sales among producers in the survey exceeded $1.4 million at these facilities. A major finding of the study suggested that consumers patronize farmers markets more in small to medium size communities than in large communities in MS. This finding suggested a strategy of developing direct marketing facilities in rural to small communities could increase locally grown fresh fruits and vegetables and enhancing community development by fostering a sense of community.

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	Quantitative Target	Actual
2010	20	2

3c. Qualitative Outcome or Impact Statement

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

What has been done
MSU-ES designed the Smart Aging: Healthy Futures program to help communities foster the healthy aging of their senior populations. During FY09 and 10 the project was conducted in Oktibbeha, Clay, Copiah and Lincoln Counties and, in part, in the City of Pascagoula. A series of public forums, directed by Extension Service, led communities to establish priorities for local action and senior volunteer groups were formed to work on those priorities. Over 350 people attended the forums and approximately 80 individuals participated in the action group training.

Results
Having the right people together at the right time created opportunities and committed volunteers who worked diligently to accomplish their objectives. Senior centers have been developed and opened in Crystal Springs and Starkville as a result of the efforts of two of the action groups. Brookhaven was already working on a community block grant application for a center and the Smart Aging community action group served as an advisory group to that effort. Clay County secured a location to begin a center, but is struggling with how to move forward.

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	Quantitative Target	Actual
2010	20	23

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many small towns in Mississippi host annual cultural and musical events, festivals, sport tournaments, and other tourism activities to help develop and grow their communities. If planned correctly, the economic impact (employment, income, sales, and tax revenues) of these activities and events can be rewarding and provide a long-term revenue stream for the town. However, most small town officials, tourism analysts, and recreation managers have little formal training in economics to measure the economic benefits from these or justify the continued investment of public resources in them.

What has been done
Extension Community and Economic Development Specialists, working with several community tourism directors, developed an Excel-based spreadsheet model know as TIM (Tourism Impact Model) to evaluate the economic impact of selected festivals, sporting, and tourism events locally in Mississippi. The purpose of the spreadsheet model is to provide a way to estimate the economic impact of various tourism-related activities and events in Mississippi counties.

Results
The primary benefit of the model to decision makers and tourism managers is it may help focus their efforts on tourism that meet their long-term objectives of attracting more visitors and spending to the area. The user may conduct sensitivity analysis by varying key variables such as duration of events, mean stay of overnight visitors, number of participants, number of spectators, percent of participants and spectators from outside the local area, and percent of participants and spectators staying overnight to see how they impact local tourism in the area. A final benefit of the model is the ability to conduct assessments in other communities and counties hosting similar tourism events to help developers and policymakers evaluate realistic decisions about the community's chances of attracting visitors to the area.

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	Quantitative Target	Actual
2010	10	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi has high rates of death, diabetes, cardiovascular disease, infant mortality, and obesity. In addition, many Mississippi counties fall well below the nation's poverty rate. The strain on a health care infrastructure is felt locally as health services are slowly leaving the State of Mississippi. Although many communities know that health care is critical to the physical and mental well being of its citizens, they may not recognize that health care as a services sector is also an important part of economic well being of their community.

What has been done
HealthConnect provides a comprehensive, interactive process designed to improve local health care access, and help communities understand the importance of local health care. The process begins with an economic impact analysis of the local health care industry in a community. HealthConnect provides Health resource inventory identifies and promotes the health services available in the local area. Community forums unveil survey and study results to local residents and other stakeholders.

Results
Analyzed health care in local economies to support the Mississippi Hospital Association for the accreditation of critical access hospitals in Mississippi. Partnered with others to improve health

outcomes in an 18-county region of the Mississippi Delta. Activities included an analysis of economic impacts throughout the region, a comprehensive inventory of health resources, a survey of more than 6,000 households to gauge people's perceptions regarding their health and the efficiency of the local health care system; and the development of a web-based evaluation system using The Balanced Scorecard as the initial framework.

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	Quantitative Target	Actual
2010	10	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
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 and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 21

1. Name of the Planned Program

Childhood Obesity

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
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 professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	3.6	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
93128	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
93128	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Extension programming was provided as follows: face-to-face workshops, interactive video workshops, demonstrations (including Body Walk), newsletters, web-based information, (including Families, Food and Fitness page on eXtension).

2. Brief description of the target audience

The target for this program includes both adults and children. In Mississippi, 32.5% of adults and 44.4% of children were classified as obese according to a Robert Wood Johnson Foundation study in July 2009. To reach the children, adults must change their habits as well.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	28049	42038	28049	42038

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of people attending workshops.

Year	Actual
2010	23362

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of people reporting a positive change in health behavior(s).
2	Number of people reporting improvement in at least one healthy outcome (body mass index, blood glucose, blood pressure, cholesterol, etc.).

Outcome #1

1. Outcome Measures

Number of people reporting a positive change in health behavior(s).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	4672

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi remains the most obese state for the sixth year in a row. Mississippi's adult obesity rate is 33.8 percent. The report also indicates income disparity based on higher obesity rates in lower income brackets. Adults earning less than $15,000 per year had an obesity rate of 35.3 percent while adults earning $50,000 or more per year had a lesser obesity rate of 24.5 percent. Among Mississippi?s youth population, 21.9 percent aged 10-17 are obese based on the 2009 F as in Fat Report from Trust for America's Health. Mississippi rates first out of all other states for childhood obesity.

What has been done
EFNEP targets resource-limited audiences to provide nutrition education that will enable families to have the knowledge, skills, attitudes, and changed behavior necessary to promote a healthy lifestyle. The adult and youth EFNEP program consists of a hands-on lessons presented by paraprofessionals. EFNEP programs are presented in locations such as public school classrooms, Head Start Centers, churches, Department of Human Services offices and WIC offices. In FY2010, there were 50,350 youth participants. Additionally, there were 1096 adults enrolled in EFNEP with 89 percent completing the program.

Results
Among youth participants, 48 percent increased their knowledge of the essentials of human nutrition, and 69 percent increased their ability to select low-cost, nutritious foods. Among adult participants, 48 percent more often thought about healthy food choices when deciding what to feed their family and 66 percent of participants more often used the Nutrition Facts on food labels to make food choices. Upon entering the EFNEP program, 9 percent of adults demonstrated acceptable nutrition practices such as planning meals, making healthy food choices, preparing foods without adding salt, and reading nutrition labels. By comparison, 32 percent of the adult participants that completed the program demonstrated acceptable nutrition practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Number of people reporting improvement in at least one healthy outcome (body mass index, blood glucose, blood pressure, cholesterol, etc.).

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Programmatic Challenges

Brief Explanation

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

Evaluation Results

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
503	Quality Maintenance in Storing and Marketing Food Products	0%		10%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	10%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	90%		90%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	3.3	0.0	4.6	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
85459	0	94339	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
85459	0	398752	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	905516	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Extension educational programming will be offered, including food safety certification courses for foodservice professionals.

2. Brief description of the target audience

General public (adults and youth) and foodservice professionals.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	22330	34441	16748	25831

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	158	158

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2010	16558

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of food-service professionals adopting new practices based on research/extension recommendations.
2	Number of food-service professionals reporting increased revenue/decreased expenses due to practices changed.
3	Number of food-service professionals achieving required certification in food handling techniques.

Outcome #1

1. Outcome Measures

Number of food-service professionals adopting new practices based on research/extension recommendations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	3312

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The safety of the food supply is very important, including that of fresh and processed fruits and vegetables. Produce is responsible for about 15% of the total foodborne outbreaks in the USA. Prevention through education/training is needed to implement strategies to bring safe foods to the consumer.

What has been done
Developed new trainings and materials in Good Agricultural and Manufacturing Practices and in Food Safety at Farmers Markets was the first step in this endeavor. Material was developed with collaboration with many scientists and state agencies, in addition to volunteers. Training has been delivered to more than 250 people in 2010 and already more than 100 in 2011. Training has resulted in the certification of more than 25 entities in USDA-GAPs.

Results
This program helps certify farms and packinghouses in Good Ag Practices, a step important in meeting food safety and enhancing marketability of fresh produce. The training has reached many farmers markets participants, which then enhances the safety of fresh and prepared foods served at these markets. Over 30 markets are certified, from a total of 55 farmers markets in Mississippi.

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #2

1. Outcome Measures

Number of food-service professionals reporting increased revenue/decreased expenses due to practices changed.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	1325

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.

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-ES specialists have trained 500 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
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #3

1. Outcome Measures

Number of food-service 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	Quantitative Target	Actual
2010	{No Data Entered}	2650

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Mississippi Food Code requires anyone serving food for pay 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. 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
MSU-ES and its partners provide a 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 which lasts for a five years. 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 recertifying, and a 16-hour training module for those who are new to food safety management. 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 2010, 28 classes were taught to 432 individuals seeking certification throughout the state of Mississippi. Classes were offered in many Mississippi counties including, Washington, Grenada, Sunflower, Oktibbeha, Jones, Lauderdale, Scott, Stone, Panola, Lee, Tunica, Laurel, Harrison, Carroll, Yalobusha, Coahoma, and Newton. Passage rate for all attendees taking the certification exam was 72%. MSU-ES instructors have been praised for their dedication and professionalism

regarding the curriculum and training by many of the participants. MSU-ES is recommended by the Mississippi State Department of Health to businesses and individuals seeking certification in Mississippi.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

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

Evaluation Results

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
111	Conservation and Efficient Use of Water	15%		15%	
132	Weather and Climate	85%		85%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	0.2	0.0	1.7	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
4043	0	197248	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
4043	0	35807	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	270648	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Efforts made in this program area have been indistinguishabile from those within other planned programs. The new plan reflects a new focus in this program area.

2. Brief description of the target audience

The target audience for this program is agricultural producers (plant and animal) that may be affected by climate changes and their impact on resources necessary for production.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	6	0	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	6	6

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of people attending events.

Year	Actual
2010	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers adopting practices based on research/extension recommendations.

Outcome #1

1. **Outcome Measures**

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

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

Evaluation Results

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
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	20%		20%	
402	Engineering Systems and Equipment	70%		70%	
403	Waste Disposal, Recycling, and Reuse	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	0.3	0.0	1.1	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
7512	0	26537	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
7512	0	2630	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	2497815	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Efforts made in this program area have been indistinguishabile from those within other planned programs. The new plan reflects a new focus in this program area.

2. Brief description of the target audience

The target audience for this program is generally producers of crops used to create energy sources (corn for ethanol, soybeans for biodiesel, etc.) and the producers and distributors of those energy sources.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	63	20	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	32	32

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of people attending events.

Year	Actual
2010	14

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.
2	Number of producers increasing sustainable energy levels.

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 Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Each year Mississippi State Extension service sends out over 100 plans for barns and greenhouses to mostly homeowners. The plans either have no heating or have outdated heating. With continually rising energy cost, efferent use of energy is cost effective.

What has been done
New energy efficient methods of heating greenhouses are being evaluated. Ground loop heat pumps, solar heat, and bio-mass systems are being examined. A publication helping the owner understand and evaluate their needs and costs is being formulated.

Results
New heating technologies can save producers thousands of dollars on energy yearly. Production can be increased due to higher or more consistent temperatures. The reduced energy consumption will result in lower pollution levels.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

Outcome #2

1. Outcome Measures

Number of producers increasing sustainable energy levels.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Alternative energy to replace petroleum and other fossil energy is necessary for sustainable development. In Mississippi, about 45% of energy demand is satisfied by petroleum, and natural gas and coal meet another 25% and 16% energy demand respectively. Energy from biomass only contributes 7.1% to the total energy consumption in Mississippi in 2008. 3.6 million dry tons of logging residues and 3.2 million tons of municipal solid waste are generated annually. The agricultural industry in Mississippi could produce about 2.2 million dry tons of biomass residues. Bio-energy from biomass is safe, renewable and efficient and is a very promising alternative energy.

What has been done
The Mississippi Sustainable Energy Research Center (SERC) is engaged in the development of biomass-based biofuels, including pyrolysis bio-oil, biocrude, biomass derived syngas and liquid hydrocarbons. A biomass fast-pyrolysis system, a biomass-gasification systems and a hydrocarbon synthesis system have been set up. Pilot plants for biomass fast-pyrolysis and downdraft gasification have been constructed. It would provide strong support for bio-fuel R&D and manufacturing in Mississippi State.

Results
The Mississippi SERC has become a leading research center in biomass-based biofuels in US. It has the ability to produce bio-oil by fast-pyrolysis process with a yield of 65 wt%. The biomass gasification system can produce syngas with ~70% energy conversion rate and more than 90% carbon conversion rate. The liquid hydrocarbon production from syngas has reach 10 wt% yield. New generation catalysts for liquid hydrocatbon production and bio-oil upgrading are under development. Steam-blown and oxygen-blown biomass gasification system is also being developed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

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

Evaluation Results

Key Items of Evaluation