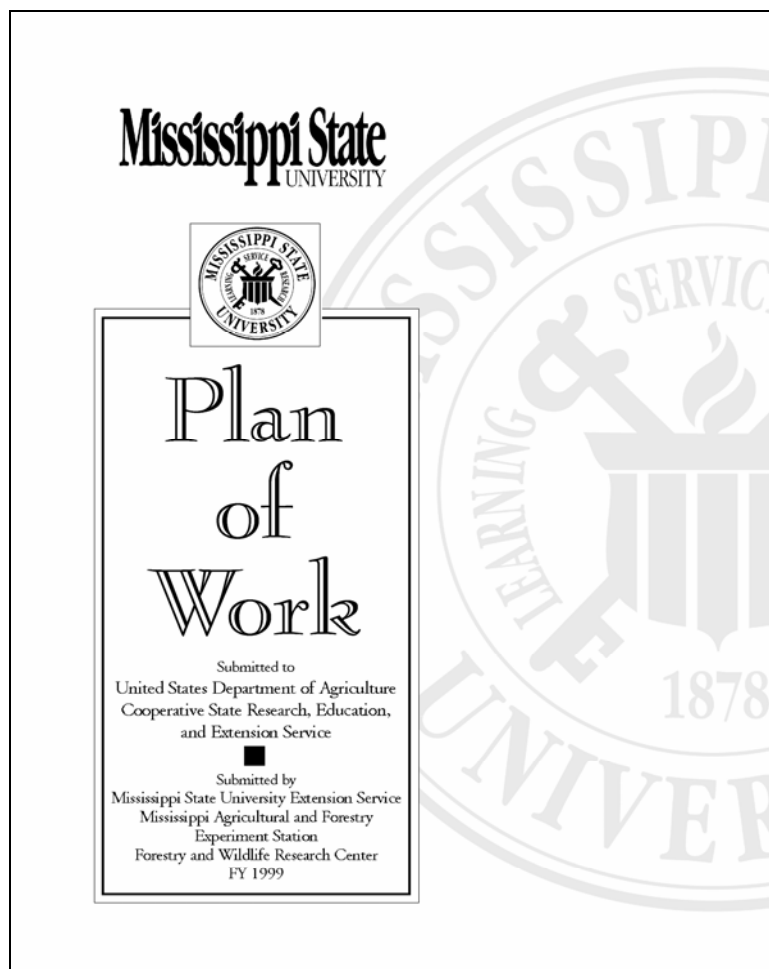


FY 2006 Annual Report of Accomplishments and Results

Submitted to

**United States Department of Agriculture
Cooperative State Research, Education, and Extension Service**



**Joint Report
Mississippi State University Extension Service
Mississippi Agricultural and Forestry Experiment Station**

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A. Planned Programs

Mississippi State University (MSU), including the Mississippi State University Extension Service (MSU-ES) and the Mississippi Agricultural and Forestry Experiment Station (MAFES), has undergone a major restructuring since submission of the 1999 Plan of Work. As noted in the FY 2005-2006 Plan of Work Update, MSU has organized its research and extension efforts into 16 priority program areas (PPA). While some of the efforts have remained the same, the organization has changed. Short-, intermediate-, and long-term outcomes, outputs, and impacts from programs established before AREERA are summarized under each goal below.

Goal 1: An agricultural system that is highly competitive in the global economy.

Overview

The following programs are included under goal 1. Each PPA is given with the specific programs under each listed after the PPA. Each program is classified as either Integrated Research and Extension (IR&E), Research (MAFES), or Extension (MSU-ES).

Agronomic Crops

- Production and Management Systems for Corn and Small Grains (IR&E)
- Production and Management Systems for Cotton (IR&E)
- Harvesting for Agronomic Crops (IR&E)
- Irrigation of Agronomic Crops (IR&E)
- Production and Management Systems for Rice (IR&E)
- Production and Management Systems for Soybeans and Peanuts (IR&E)
- Soil/Fertility/Fertilizers for Agronomic Crops (IR&E)
- Variety Evaluation Selection (IR&E)
- Genetics and Variety Development (MAFES)
- Weed Control (IR&E)

Animal Science/Forages

- Beef Production and Management (IR&E)
- Dairy Production and Management (IR&E)
- Swine Production and Management (IR&E)
- Forage Production (IR&E)
- Beef and Forage Genetic Improvement (MAFES)

Aquaculture

- Catfish Production and Management (IR&E)
- Crawfish Production and Management (IR&E)
- Shrimp/Prawn Production and Management (IR&E)
- Fish Behavior (MAFES)
- Fish Health (MAFES)

- Harvest Technology (MAFES)
- Nutrition (MAFES)
- Water Quality (MAFES)

Enterprise and Community Development

- Food and Food Products (MSU-ES)
- Forest Products (IR&E)

Forestry

- Forest Management (IR&E)
- Logger Education (IR&E)
- Timber Marketing (IR&E)

Horticulture

- Commercial Nursery/Landscape Production (IR&E)
- Fruit Production (IR&E)
- Turf Production (IR&E)
- Vegetable Production (IR&E)

Poultry

- Breeder Management (IR&E)
- Broiler Management (IR&E)
- Hatchery Management (IR&E)
- Reducing Malodor and Pathogens (MAFES)
- Lipoproteins and Egg Mycoplasma (MAFES)
- Fertility in Broiler Breeders (MAFES)
- Cocci Vaccine Development (MAFES)

Risk/Farm Management

- Agriculture and Natural Resources/Environmental Programs and Regulations (IR&E)
- Marketing (IR&E)
- Risk Management (IR&E)

Outputs--research and extension activities--under this goal are provided in the table below.

Priority Program Area (PPA)	Refereed Articles	MAFES Pubs.	Extension Pubs.	Extension Contacts
Agronomic Crops	51	20	0	307,066
Animal Sciences/Forages	28	1	1	200,943
Aquaculture	36	1	3	7,355
Enterprise and Community	9	0	0	1,843

Development				
Forestry	2	0	0	94,648
Horticulture	32	1	2	93,221
Poultry	11	0	0	1,374
Risk/Farm Management	4	0	0	20,467

Overall Expenditures for Goal 1

Function	FTE	Expenditures*
Experiment Station	58.25	\$25,298,275
Extension Service	59.81	\$4,109,887

* Expenditures reflect federal and matching funds.

Progress toward intermediate- and long-term outcomes and impacts/outcomes for ongoing programs are documented under the key themes in the next section.

Key Themes

Key Theme – Animal Production Efficiency

a. Beef producers have tried many ways to improve the profitability of cow-calf operations in recent years. One marketing technique that has shown promise is retained ownership of calves through the feeder stage. Researchers at MSU have been investigating the option of corn-grazing of stocker calves, which has the potential benefits of combining retained ownership with utilization of previously non-producing land, along with a possibility of establishing a unique marketing advantage to the producers.

After two years, the results of corn grazing look promising. An analysis of steaks from corn-grazed cattle showed that they have been of comparable quality to feedlot-fed animals. Rates of gain have also been comparable, particularly when weather conditions have been good for corn production. More analyses on sustainable agriculture benefits are being conducted.

b. With the positive results to date, Extension efforts are being undertaken to promote this new method of retained ownership and develop proper marketing strategies. This technique appears to have excellent benefits for beef producers.

c. Hatch and Smith-Lever Funds (amounts and FTE not available)

d. Integrated Research and Extension

Key Theme – Biofuels

a. Switchgrass site suitability in Mississippi is examined from the viewpoints of ecology and economics. As energy costs continue to rise and alternatives to fossil fuels examined, switchgrass production could represent an alternative energy source. The Department of Energy is funding this study that examines both ecological suitability and economic issues of crop conversion or conversion of non-agricultural lands to switchgrass production.

The Geosciences department and GRI are using Geographic Information System (GIS) raster-based modeling techniques to perform the ecological site suitability analyses. Variables of interest include soil drainage and fertility, slope and roughness measures calculated from digital elevation models (DEM), climate, and current land cover.

b. Understanding where ecologically suitable areas exist in Mississippi for switchgrass production is a major component in an overall strategy that targets alternative energy production. Potential impacts are many and varied and include both research and extension. Biofuels are important to farmers as a potential cash crop, to the general public as an alternative energy source and to the government in terms of potential policy issues.

c. Hatch and Smith-Lever Funds (amounts and FTE not available)

d. Integrated Research and Extension

Key Theme – Animal Production Efficiency

a. Poultry producers have had trouble making a profit lately because of increased costs of fossil fuels. Mississippi State University extension in conjunction with USDA-Poultry research unit at Mississippi State has developed a system to use air from the attic to brood baby chicks. The attic air is on the average 10 °F warmer than outside air. This system can be used during the cooler months for brooding and during the summer to help dry the house between batches. The “preheated” air in the attic should reduce the money the farmer spends on fossil fuel.

b. Farmers using this system have been able to reduce fossil fuel costs by \$500 to \$625 per house.

c. Hatch and Smith-Lever Funds (amounts and FTE not available)

d. Integrated Research and Extension

Key Theme – Invasive Species

a. Invasive plant species in both aquatic and terrestrial sites are a problem of national scope, costing billions of dollars in lost productivity and management costs. These species directly impact row-crop agriculture (e.g., tropical spiderwort), pastureland (e.g., tropical soda apple), timberland (e.g., cogongrass), roadsides (e.g., kudzu), wetlands (e.g., alligatorweed), and waterways (e.g.,

waterhyacinth). While the problem is diverse and diffuse, the source of the problem is common in terms of unrestricted introduction of species, inadequate monitoring and control, and ill-advised planting. Invasive plants are found in every habitat within the State of Mississippi. Nonnative invasive species also adversely impact ecosystems, causing loss of native plant diversity, cause species extinction, and impair wildlife habitats. Aquatic invasives are of particular interest since they can have a direct impact on our nation's fresh water supply.

Species such as waterhyacinth, hydrilla, and Eurasian watermilfoil, as well as many others, interfere with human's use of water resources and increase the risk of flooding and some insect-borne diseases. Approximately \$100M per year is spent on the management of nonnative aquatic plants in the United States. The national cost of terrestrial invasive plants has been estimated at over \$35B per year, with costs to agriculture of at least \$20B per year. Despite this extensive expenditure, most of the methods used to detect and quantify the distribution of these invaders are ad hoc, at best. Likewise, decisions on the type of management techniques to be used or evaluation of the success of these methods are typically non-systematic. More efficient methods to detect or predict the occurrence of these species, as well as the incorporation of this knowledge into decision support systems.

Mississippi State University has developed a comprehensive response to invasive plant species, through funding from the USGS. MSU is one of the few land grant universities with research and extension faculty focused on both terrestrial and aquatic invasive plant management. We have developed predictive models of habitat suitability for cogongrass and invasive aquatic plants, to better survey for invasive plants. Our research has generated methods for remote sensing, to detect invasive plant species. Through research, we are developing improved management methods and recommendations for invasive aquatic and terrestrial plants, which are then translated into outreach products such as the Weed Control Guidelines for Mississippi, fact sheets (six new fact sheets published in the past year), and a new webpage to be launched in 2007, the Invasive Plant Atlas of the Mid-South (www.gri.msstate.edu/ipams).

b. Our goal is to increase the efficiency of invasive species management and to increase allocations for managing invasive species in Mississippi. The potential payoff is huge, given that the cost of the problem of invasive species as a whole is estimated at over \$137B per year nationwide, with an estimated \$40B of this for invasive plant species alone.

c. Hatch and Smith-Lever Funds (amounts and FTE not available)

d. Integrated Research and Extension

Key Theme – Animal Health

a. During winter, chick health quality in poultry houses decreases significantly, as shown by increased mortality and morbidity. In addition to lower temperatures overall, one factor is the swings in humidity from when misters are turned on and off.

Mississippi State University extension in conjunction with USDA-Poultry research unit at

Mississippi State has developed a system to maintain the desired humidity in the hatchery. Instead of an on-off system, which promotes wide swings in temperature, this system works with foggers that are always on with the number of nozzles necessary to maintain the optimum conditions. Since the system always on, it promotes a uniform temperature and humidity with the results a healthier and more vigorous chick.

b. With healthier chicks, the farmer has less mortality and morbidity. The company and farmer have a better opportunity to increase the amount of money each has at the end of the growing period. Extension efforts have been used promote widespread implementation of this system during the past year, and adoption is expected to be excellent.

c. Hatch and Smith-Lever Funds (amounts and FTE not available)

d. Integrated Research and Extension

Goal 2: A safe and secure food and fiber system.

Overview

The following programs are included under goal 2. Each PPA is given with the specific programs under each listed after the PPA. Each program is classified as either Integrated Research and Extension (IR&E), Research (MAFES), or Extension (MSU-ES).

Agronomic Crops

- Safety (IR&E)

Nutrition and Food Safety

- Basic Foods (IR&E)
- Food Preservation (IR&E)
- Food Safety (IR&E)

Aquaculture

- Catfish Food Quality and Safety (MAFES)

Outputs--research and extension activities--under this goal are provided in the table below.

Priority Program Area (PPA)	Refereed Articles	MAFES Pubs.	Extension Pubs.	Extension Contacts
Agronomic Crops	4	0	0	15,760
Nutrition and Food Safety	8	0	0	39,158
Aquaculture	16	1	0	

Overall Expenditures for Goal 2

Function	FTE	Expenditures*
Experiment Station	5.27	\$1,199,508
Extension Service	6.33	\$465,825

* Expenditures reflect federal and matching funds.

Progress toward intermediate- and long-term outcomes and impacts/outcomes for ongoing programs are documented under the key themes in the next section.

Key Themes

Key Theme – Food Handling

a. In the poultry industry, broilers are either caught by hand or through the use of catching machines. Catching machines were developed since some researchers reported that manual catching of broilers was stressful to birds since they are carried in an inverted position and come into contact with humans. Catching machines are designed so that birds are not inverted and so that there is minimal contact between humans and the broilers during catching. Some researchers have also reported that machine catching may be able to improve the welfare of farm workers since chicken catching is one of the most stressful operations in the industry. Both hand and machine catching are utilized in the industry, but minimal research has been reported on whether differences in breast meat quality exist among birds caught by the two catching methods.

Researchers in the Department of Poultry Science and the Department of Food Science, Nutrition, and Health Promotion conducted trials in the summer and the winter to determine if there were any differences in breast meat quality between hand and machine caught birds.

In the summer trial, broilers that were machine caught and left in crates for 2 hours prior to harvest had slightly better meat quality than hand caught birds. This was evident by lower cooking loss, lower drip loss, and a higher 15-minute pH. There was also a lower incidence of paleness and rapid pH decline in mechanically caught birds that were crated for 2 hours prior to euthanasia in comparison with hand caught birds.

In the winter trial, birds that were hand caught and crated for 2 hours had higher cooking loss and increased paleness in comparison to machine caught birds that were crated for 2 hours prior to harvest. There was also a lower incidence of paleness and rapid decline in the machine caught birds in comparison to the hand caught birds. Fewer differences between treatments occurred in the winter than the summer. This may be attributable to the high temperature in the summer that can cause induce stress on the broilers.

Even though meat quality was slightly improved in the machine catch treatment when compared to the hand catch treatment, either machine or hand catching methods can be used to yield good quality breast meat. Mechanical catching may be more advantageous than hand catching under stressful conditions such as summer temperatures since there was a tendency for lower incidence of potential quality problems, including paleness and rapid pH decline. Crating birds for 2 h prior to harvesting the broilers allowed for better meat quality than performing euthanasia immediately after catching, especially in mechanically caught birds during the summer season.

b. Research revealed that both machine and hand catch methods can yield good quality broiler breast meat. Results also confirm that machine catching may be able to improve meat quality, especially under stressful conditions. Therefore, both chicken-catching methods could be utilized to catch broilers, thus potentially improving the welfare of both the broilers and farm workers. This information will be shared with industry personnel through Extension efforts.

- c. Hatch and Smith-Lever Funds (amounts and FTE not available)
- d. Integrated Research and Extension

Key Theme – Food Safety

a. *Vibrio vulnificus* is a rare but leading cause of foodborne fatalities among high-risk consumers of raw Gulf-Coast oysters. This pathogenic bacterium is known to be temperature sensitive. In response to this concern, the U.S. Food and Drug Administration has determined the need for post-harvest oyster treatments that can reduce *Vibrio vulnificus* to “post harvest treatment” validation levels of <30MPN/g oyster meat and to non-detectable levels of <3 MPN/g oyster meat.

Two studies were conducted using chill temperature technologies to assess effectiveness in controlling *V. vulnificus* in oysters. The first study used cryogenic freezing and frozen storage. The second study used a live well cold depuration system. Oysters (*Crassostrea virginica*) were harvested in Louisiana/Mississippi and enumerated for their natural level of *V. vulnificus*. The first process consisted of placing the oysters onto a Carbon Dioxide cryogenic conveyor tunnel. Freezing occurred at -87°F for 10 min. In the second process, live oysters were washed and placed into 2 live well tanks with a circulating water system equipped with UV sterilization tube. Water salinity varied with each set of experiments i.e. 12, 16, 20, or 24 ppt sea salt. The temperature of both tanks was maintained at 78-80°F. Following acclimation of the oysters to their new environment, approximately 12 hours, the control tank continued to be maintained at the original temperature and the experimental tank temperature was reduced to 50-52°F using a circulating water chiller.

b. Both cryogenic freezing and rapid chill depuration of oysters effectively reduced *V. vulnificus* populations in Gulf-Coast oysters. Cryogenic freezing successfully reduced *V. vulnificus* numbers from 87,000 MPN/g oyster meat to < 30 MPN/g oyster meat in 7 days and to non-detectable levels (<3 MPN/g oyster meat) in 35 days. Chill depuration reduced *V. vulnificus* from 14,300 MPN/gram oyster meat by two logs at 12, 16, and 20 ppt salinity. At 24 ppt, oyster mortality rate was about 50% after 5 days and was not considered a practical option. Rapid chill depuration provides small oyster processors a viable inexpensive method to reduce *V. vulnificus* levels to acceptable risk levels (<30 mpn/g oyster meat) if initial counts are low.

- c. Hatch Funds (amounts and FTE not available)
- d. Research

Key Theme – Food Safety

a. Control and prevention of food borne illness outbreaks includes measures to prevent or minimize food contamination, destruction of microorganisms or destruction of toxins and preventing the growth of pathogenic microorganisms. This can be achieved through the application of hazard analysis critical control point (HACCP) system. Federal regulations mandate that meat and poultry

processors (USDA) and fish and fishery products (FDA) have personnel trained in the hazard analysis critical control point system to ensure food safety in processing plants. The request for training personnel continues.

Since the USDA mandated the Pathogen Control and HACCP regulation in 1996, the MSU Extension Service has been providing training annually to meet the needs of the meat and poultry processing industries.

c. In 2006 thirty people from MS, AL, and TN states received training through the program held at MSU. The significant impact for the processors has been meeting mandatory training requirements. The training will benefit processors economically by reducing food safety risks, decreasing likelihood of product recalls, and providing reliable productivity tracking system throughout the process. It is probable that the training also results in the opportunity for new processors to open operations as well as continued operation for other processors. As the need arises from industry to train more personnel, this course is scheduled and conducted at a minimal cost to the processors. Having this training available through the MSU Extension Service also results in a direct savings for the processors by eliminating the necessity of identifying, scheduling, and contracting with one to the many private consulting firms offering these services for a much higher fee.

c. Smith-Lever Funds (amounts and FTE not available)

d. Multi-State Extension

Goal 3: A healthy, well-nourished population.

Overview

The following programs are included under goal 3. Each PPA is given with the specific programs under each listed after the PPA. Each program is classified as either Integrated Research and Extension (IR&E), Research (MAFES), or Extension (MSU-ES).

Health

- Health and Safety (IR&E)
- Health Career Development (MSU-ES)
- Coalitions/Community Partnerships (IR&E)
- Mississippi Homemaker Education Volunteers (MSU-ES)

Nutrition and Food Safety

- Human Nutrition (IR&E)
- Nutrition Related Disease (IR&E)
- Expanded Food and Nutrition Program (MSU-ES)
- Family Nutrition Program (MSU-ES)

Outputs--research and extension activities--under this goal are provided in the table below.

Priority Program Area (PPA)	Refereed Articles	MAFES Pubs.	Extension Pubs.	Extension Contacts
Health	0	0	4	199,696
Nutrition and Food Safety	1	0	3	959,625

Overall Expenditures for Goal 3

Function	FTE	Expenditures*
Experiment Station	0.99	\$116,960
Extension Service	68.95	\$3,418,274

* Expenditures reflect federal and matching funds.

Progress toward intermediate- and long-term outcomes and impacts/outcomes for ongoing programs are documented under the key themes in the next section.

Key Themes

Key Theme – Human Health

a. The Master Health Education Volunteer Program is designed to increase the local Mississippi State University Extension Service's capacity to reach targeted audiences with effective health education. Many of our communities lack access to accurate, easy to understand health promotion information. This program bridges that gap, putting essential information in the hands of community members that need it.

The Master Health Education Volunteers (MHEVs) complete 40 hours of training and agree to give 40 hours of community service back in exchange for the training received. The health education curriculum targets a variety of health issues such as breast cancer awareness, prostate cancer awareness, diabetes, nutrition, oral health, and Know Your Numbers (a program designed to increase awareness of an individual's body mass index, cholesterol, blood pressure, and glucose levels), exercise, and a leadership component. Twenty-four men and women graduated from the first class in the fall of 2006.

b. The well-trained Master Health Educator has been trained to deliver health education using powerpoints with speaker notes. Presentations have been delivered to civic clubs, faith-based organizations, workforce industry personnel, Head Start parents, and youth groups. MHEV members have also participated at health fairs distributing health education brochures. Over 700 people have been reached via health education presentations or through health fairs. In Newton County, which is part of the EC HealthNet, two MHEVs have been delivering presentations to workforce industries, receiving positive feedback from personnel and management. Coupled with the presentations, Newton Regional Hospital has offered PSA screenings. At one screening, 4 out of 55 men had abnormal PSA levels and were advised to visit their physician. The education offers knowledge to many that may never have had the opportunity to learn about the early signs and symptoms, risk factors, and early detection of prostate cancer. This is an example of community coming full circle with the Master Health Education Volunteers, hospital personnel, and workforce industry personnel working together to enable a healthier community.

c. Smith-Lever Funds (amounts and FTE not available)

d. Multi-State Extension

Goal 4: An agricultural system which protects natural resources and the environment.

Overview

The following programs are included under goal 4. Each PPA is given with the specific programs under each listed after the PPA. Each program is classified as either Integrated Research and Extension (IR&E), Research (MAFES), or Extension (MSU-ES).

Agronomic Crops

- Integrated Pest Management (IR&E)

Aquaculture

- Game-Fish Culture (IR&E)

Environment/Nutrient Management

- Animal Waste Management (IR&E)
- Soil Management (IR&E)
- Water Quality (IR&E)
- Environmental Stewardship (MSU-ES)

Horticulture

- Integrated Pest Management (IR&E)

Wildlife/Fisheries

- Wildlife Management (IR&E)
- Fisheries Management (IR&E)
- Ecology and Management of Sustainable Resources (FWRC)
- Ecosystem Management and Restoration (FWRC)

Outputs--research and extension activities--under this goal are provided in the table below.

Priority Program Area (PPA)	Refereed Articles	MAFES Pubs.	Extension Pubs.	Extension Contacts
Agronomic Crops	15	0	0	16,390
Aquaculture	0	0	0	228
Environment/Nutrient Management	3	0	0	10,030
Horticulture	1	0	0	41,593
Wildlife and Fisheries	0	0	0	36,540

Overall Expenditures for Goal 4

Function	FTE	Expenditures*
Experiment Station	12.44	\$4,119,920
Extension Service	20.08	\$1,872,555

* Expenditures reflect federal and matching funds.

Progress toward intermediate- and long-term outcomes and impacts/outcomes for ongoing programs are documented under the key themes in the next section.

Key Themes

Key Theme – Endangered Species

a. Cactus moth (*Cactoblastis cactorum*), which is one of the most successful biological control agents in history, has been transported around the world, in various prickly pear (*Opuntia* spp.) cactus control programs. By 2002, free-living populations of the moth had spread from the Florida Keys to the Florida Panhandle and South Carolina. It now poses a serious threat to native prickly pear cactus populations in the American Southwest, as well as the cactus industry and desert ecosystems in Mexico. The cactus moth in the United States, directly threatens a total of 31 species of native prickly pear cacti plus numerous other native species associated with cacti. In Mexico, 53 species of prickly pear are threatened, including 38 endemic species. Cactus moth is not only a threat to North American biodiversity, but will also threaten agronomic uses of cactus for food, forage, and beverage production. Mississippi State University, led by the GeoResources Institute, is working with the U.S. Geological Survey and USDA-APHIS, in collaboration with the Government of Mexico, on this important issue. We have developed an early detection and rapid response network that involves scientists, resource managers, and volunteers in the southeast, and soon to be expanded across the country. Mississippi State University is providing the cactus moth and prickly pear taxonomic experts that initially verify these species, we provide the database and mapping program to track the cactus moth and plants (http://www.gri.msstate.edu/cactus_moth), and we provide the training to volunteers to identify the prickly pear cactus and the moth. We have trained over 100 volunteers to identify the moth, and have trained over fifty volunteers at sentinel sites to monitor for the moth on a continuing basis.

b. This effort will potentially save cactus species in the southwestern United States and Mexico, maintaining biodiversity, and also help preserve cactus-based agriculture in Mexico, which is approximately 2% of total agricultural production. This moth will also threaten the horticultural use of cactus throughout the United States and Mexico. The potential cost of widespread invasion of the cactus moth is over \$100M per year, based on sales of prickly pear agricultural products, forage, wildlife food, and horticultural sales.

c. Hatch and Smith-Lever Funds (amounts and FTE not available)

d. Integrated Research and Extension

Key Themes – Forest Resource Management

a. Mississippi has numerous wildfires each year that require personnel and resources to extinguish. Extensive damage to the timber and other forest resources by hurricane Katrina may increase the risk wildfires in the near future.

Collaborative studies by the GeoResources Institute, Geosciences, Department of Forestry, and the Mississippi Forestry Commission (MFC) are addressing the factors that are important for early warning of wildfire potential in the hurricane damaged areas and for wildfires in general. NASA-funded studies have resulted in several breakthroughs for modeling fire potential in eastern forest environments. Among these are improved climatic, fuels, and ignition components modeled using Remote Sensing (RS) and Geographic Information Systems (GIS) in a raster (cell-based) environment. Conference proceedings at the 2nd Fire Fuels and Behavior Conference and a paper accepted by the Journal of Forestry highlight the fuels and ignition components.

b. Optimizing the deployment of personnel and equipment both temporally and spatially benefits both the environment and the economy of Mississippi. This work is currently being extended to the southeast U.S. in collaboration with the USDA Forest Service. Post Katrina recovery and future fire risk reduction, future MFC personnel and equipment deployment, and initiation of burn-bans are practical applications of this work. Numerous research avenues are under investigation at this time and will continue for at least one full year.

c. Hatch and Smith-Lever Funds (amounts and FTE not available)

d. Integrated Research and Extension

Goal 5: Enhanced economic opportunity and quality of life for Americans.

Overview

The following programs are included under goal 5. Each PPA is given with the specific programs under each listed after the PPA. An additional PPA emerged during the past year as Extension has played a major role in Disaster Relief due to the impact of Hurricanes Katrina and Rita. Each program is classified as either Integrated Research and Extension (IR&E), Research (MAFES), or Extension (MSU-ES).

4-H Youth Development

- Animal Handling and Care (MSU-ES)
- Children, Youth, and Families at Risk (MSU-ES)
- Citizenship (MSU-ES)
- Communication/Leadership (MSU-ES)
- Consumer and Family Science (MSU-ES)
- Environmental Education (MSU-ES)
- Healthy Lifestyle Education (MSU-ES)
- Plant Care (MSU-ES)
- Science and Technology (MSU-ES)
- Volunteer Development (MSU-ES)

Child & Family Development

- Children, Youth, and Families at Risk (IR&E)
- Child Care Giver Training (MSU-ES)
- Family Life Issues (MSU-ES)
- Master Family Life Educators (MSU-ES)
- Nurturing Homes Initiative (MSU-ES)
- Parenting Education (MSU-ES)

Enterprise and Community Development

- Business Development (MSU-ES)
- Community/Economic Development (IR&E)
- Governmental Training (MSU-ES)

Family Resource Management

- Termites/Structural Pests (IR&E)
- Children, Youth, and Families at Risk (IR&E)
- Consumer Education (MSU-ES)
- Family Financial Management (MSU-ES)

Horticulture

- Ornamental Plant Care (IR&E)
- Master Gardener (MSU-ES)

Leadership Development

- Leadership Skills Development (MSU-ES)
- Master Clothing Volunteers (MSU-ES)
- Mississippi Homemaker Volunteers (MSU-ES)

Wildlife/Fisheries

- Socio-Economic Investigations of Fish and Wildlife (MAFES)

Outputs--research and extension activities--under this goal are provided in the table below.

Priority Program Area (PPA)	Refereed Articles	MAFES Pubs.	Extension Pubs.	Extension Contacts
4-H Youth Development	2	0	1	798,075
Child and Family Development	0	0	8	156,613
Disaster Relief	0	0	13	51,944
Enterprise and Community Development	0	0	0	127,225
Family Resource Management	0	0	8	73,070
Horticulture	2	0	1	114,939
Leadership Development	0	0	0	136,729
Wildlife and Fisheries	0	0	1	

Overall Expenditures for Goal 5

Function	FTE	Expenditures*
Experiment Station	3.74	\$1,914,252
Extension Service	123.93	\$6,195,464

* Expenditures reflect federal and matching funds.

Progress toward intermediate- and long-term outcomes and impacts/outcomes for ongoing programs are documented under the key themes in the next section.

Key Themes

Key Theme – Family Resource Management

a. In April 2005, the President signed the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA) into law. The new law makes the most important changes to the bankruptcy laws in a generation. Consumer cases are particularly affected, in that there are new requirements to meet before one is eligible to file and receive a discharge from debts, including completion of a personal financial management instructional course taught by a provider approved by the U.S. Department of Justice Trustee Program. Mississippi State University Extension Service Family Resource Management Agents have been approved to provide the personal financial management course and to issue certificates evidencing completion from the Department of Justice website for debtors to comply with the new bankruptcy requirements. Agents schedule monthly classroom sessions in their areas and work with local attorneys register debtors for the course.

b. The average debt discharged by families filing Chapter 7 Bankruptcy is \$100,000. Although other approved agencies offer Internet or telephone-based training, many consumers, particularly the elderly and those who are not computer literate, depend on the face-to-face workshops provided by our caring educators. Law firms believe that those completing training in the classroom with an expert learn more than those completing training on their own. Since becoming an approved provider of debtor education, MSU Extension Service Family Resource Management Agents have trained 55 participants in the Northern District of Mississippi. (The Southern District of Mississippi as defined by the Federal Judicial Districts covered by the U.S. Trustee Program has been extended a temporary waiver of the debtor education requirements for bankruptcy filers affected by Hurricane Katrina). This translates into potential prevention of millions of dollars in economic losses to communities, businesses and consumers by avoiding repeated bankruptcies through debtor education.

c. Smith-Lever Funds (amounts and FTE not available)

d. Multi-State Extension

Key Theme – Consumer Management

a. In 2006, more than 3,812 consumers reported becoming victims of fraud and identity theft through the Federal Trade Commission, with an average loss to fraud per Mississippian of \$1,664. Thousands more filed complaints with the Better Business Bureau (BBB) of Mississippi and the Office of the Mississippi Attorney General. Most victims, however, fail to report fraud, losses and unfair business practices because of embarrassment or fear. Although many federal, state and local organizations wish to serve and protect Mississippi consumers, resources are limited and varied, particularly for serving rural consumers in counties outside the capital city area where most consumer agencies are located. Mississippi State University Extension Service Family Resource Management Agents invited state and local organizations with common interests in protecting and informing Mississippians to join together to create the new Mississippi Consumer Education

Partnership to share resources and coordinate collaborative activities, including: the Consumer Protection Division of the Attorney General's Office, BBB of Mississippi, Secretary of State's Office, Treasurer's Office, the FDIC, IRS, Department of Public Safety's Leadership Council on Aging, Department of Human Services' Medicare Assistance Patrol, Elder Law/ Rural Legal Services, Consumer Credit Counseling Services, Credit Union Association, Mississippi Bankers, MSU Extension Service and other local consumer and law enforcement organizations. Believing that "an informed consumer is a protected consumer," partners planned and implemented programs and to reach consumers statewide during National Consumer Protection Week, held annually during the first full week each February. A new event was also initiated, Mississippi Consumer Education Month, to be held annually, also in February.

b. Resources of federal, state and local agencies, as well as businesses are being leveraged by sharing expertise, technology, facilities and other assets, both human and material, to inform and protect Mississippi consumers in joint efforts. To celebrate the first Mississippi Consumer Education Month in 2006, four weekly video-conference sessions were offered to consumers in all 82 counties through the MSU Extension Service's interactive video-conference network now available in all county offices, including: "Investigate Before Investing," featuring the Secretary of State's office; "Consumer Protection: It's the Name of the Game," featuring the Attorney General's Office and the Better Business Bureau; "Be a Wise Consumer of Health Care," featuring Melinda Pitts, Federal Reserve Board Economist on National Health Issues; and "Don't Be Vulnerable to Fraud and Identity Theft," featuring consumer education specialists encouraging Mississippians to protect important personal information and to create an evacuation box of important papers that could be taken quickly in an emergency situation. Videoconference sessions featuring experts were videotaped to provide a permanent record and resource to be shared on a continuing basis. Mississippi Consumer Education Partnership members are also meeting quarterly using MSU's interactive video-conferencing technology to save on travel expenses. Numerous joint efforts planned throughout the year inform and protect consumers, including: Scam Jam Consumer Fair, Triad-SALT (Seniors and Lawmen Together) Council Annual Conferences, Jumpstart Coalition for Personal Financial Education Training Programs for youth and teachers, Medicare Prescription Drug Program Education Emphases and most recently Shred-it Days at four sites where 400 consumers stood in line in cold rainy February weather to have up to 5 bags of sensitive documents shredded in National Consumer Protection Week activity led by the Attorney General's Office and conducted by partnership members. At least 700 consumers in 25 counties participated in Mississippi Consumer Education Month Activities in February, in addition to consumers reached through newspaper, radio and television media statewide.

c. Smith-Lever Funds (amounts and FTE not available)

d. Multi-State Extension

Key Theme – Child Care/Dependent Care

a. Because current government regulations permit the educational levels of non-Head Start teachers and assistant teachers to be minimal, a rigorous training system with numerous options for on-the-job educational advancement is critical for improving the quality of educational experiences young

children receive prior to school entry and for building the capacity of the early childhood workforce.

The Mississippi Child Care Resource & Referral (MSCCR&R) Network provides training, technical assistance, and resources emphasizing literacy and age-appropriate teaching strategies for the early childhood field. The MSCCR&R also provides referrals for parents seeking quality childcare and parenting education information. This is the first time Mississippi has had a childcare resource & referral system in place. A resource & referral system is an integral part of the early childhood field. They are a key component in providing a systematic format of training for the community, childcare professionals, and parents.

b. During the past two years, over 12,000 childcare providers have benefited from the training and resources that the network has provided. Over 325 workshops have been provided. A key component to the success is the partnerships that exist to support best practices in the early childhood field. Current partners include: MSU-ES, The Early Childhood Institute, Mississippi Gulf Coast Community College (MGCCC), MS Low Income Child Care Initiative, Moore Community House, National Association of Child Care Resource & Referral Agencies, and United Way of South Mississippi, East Mississippi Community College, Northeast Community College, Itawamba Community College, First Regional Library, Community Foundation of Northwest Mississippi, The Day Foundation, and Mississippi Department of Human Services, Office for Children and Youth.

c. Smith-Lever Funds (amounts and FTE not available)

d. Multi-State Extension

Key Theme – Child Care/Dependent Care

a. It is an immediate concern of parents to have a safe and healthy environment for the care of their children. Parents affected by a disaster cannot successfully return to work or focus on work issues when there is no childcare available. The rebuilding of another 500 centers is a long-range plan, and almost impossible task to accomplish within this next year. Therefore, it is a critical need for in-home childcare to be expanded and supported through educational programming and materials. After restoring and re-establishing these in-home childcare businesses, they will become self-sufficient. Many providers lost fences, playground equipment, and educational materials that created the childcare home as a safe and healthy learning environment. The geographic area covers the following Hurricane Katrina affected counties: George, Greene, Forrest, Stone, Pearl River, Hancock, Harrison, Jackson, Lamar, Marion, and Perry.

b. MSU Extension Service, School of Human Sciences Program, Nurturing Home Initiative-Part II, is rebuilding playgrounds and enhancing educational services with a target number of 149 in-home childcare businesses in Mississippi's Hurricane Katrina disaster area with \$5.9 million in federal funds awarded by the Office for Children and Youth-Mississippi Department of Human Services.

- Locating clients who wish to establish themselves as in-home child care businesses.

- Supporting those who wish to establish themselves as in-home providers through educational programming, educational materials, safe outside play areas, and quality of care assessments conducted periodically.
- Supporting established licensed and in-home childcare businesses through educational programming, quality of care assessments, replacement of playground equipment, and replacement or repair of structural fences for safe play areas.
- Improving the quality of the care that is provided by unlicensed/licensed in-home childcare providers.
- Supporting parents/families as they return to work with providing a safe and healthy environment for their children.
- Supporting parents/families with educational material about quality childcare, development of their child, and readiness activities to implement with their child at home.

c. Smith-Lever Funds (amounts and FTE not available)

d. Multi-State Extension

Key Theme – Home Safety

a. High profile child abduction cases have been in the news. Parents are fearful for the safety of their children. But a survey by the National Center for Missing & Exploited Children and ADVO Inc. found that 34% of parents could not recall the information that is vital to law enforcement officials in cases of child abduction. The survey indicated that only 56% of parents with two or more children could recall the information. The FBI counts 2,100 new missing-children cases every day. When children are abducted, the first few hours are critical. Law enforcement officials indicate, that cases involving stranger abduction, children often don't survive the first six hours. The number of cases investigated by the FBI is down from 134 in 1999 to 106 in 2000. But FBI spokesman for National Center for the Analysis of Violent Crime, Chase Foster, indicated that the figures could be misleading. "It has been extremely hard to track these cases because of the way officers and department record and report these cases. We don't know whether the trend really has increased or decreased."

Because of the terrible consequences of child abduction, abduction prevention techniques need to be taught to parents and children. A survey conducted by the National Center for Exploited and Missing Children 60% of women had reviewed this information with their children, but only 44% of males had reviewed this information with their children. Because of consequences of stranger abduction.

Mississippi State University worked with the Department of Human Services, schools, after school programs and child care centers to educate parents and communities on child abuse prevention, child abduction prevention and cyber stalking. Extension also worked hard to strengthen families to reduce risk to predator.

b. 70,000 pieces of Extension education material was given out to residents in 32 Mississippi

Counties. The material covered child abuse, neglect, child abduction, and cyber stalking. Extension also worked with families to improve family relations and bonds. About 500 parents attended child abuse, abduction, and cyber stalking programs. About 300 professionals that work with families through DHS attended a program at their annual training. About 1000 family members attended programs on making families stronger.

c. Smith-Lever Funds (amounts and FTE not available)

d. Multi-State Extension

B. Stakeholder Input Process

Grassroots efforts to determine economic, social, and environmental issues begin with County Extension Advisory Councils. Further needs assessment is carried out through Research and Extension Center Advisory Councils, state-level advisory committees, and through formal and informal interaction with other stakeholders. Issues identified include concerns to be addressed with Extension and/or research programs. MSU-ES takes the leadership role, while MAFES and FWRC are involved and benefit from the process.

County Extension Advisory Councils

As a formal process, key clientele meet 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 comes 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, while constantly striving to ensure diversity.

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 education, 4-H youth, and community and rural development issues. These groups meet at least two times per year to identify specific areas of program needs, and assist in planning, conducting, and evaluating programs.

Other Stakeholders

MSU-ES county agents are also required to obtain information regarding clientele needs from people outside the overall advisory council. 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. One important concern is to ensure programming efforts include a diverse clientele.

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 the Mississippi Agricultural and Forestry Experiment Station (MAFES). These centers each have an overall advisory council where stakeholders lead discussions about programming and research efforts and assess needs at a yearly meeting. Subgroups of the advisory councils (e.g., forestry, family, row crops, etc.) meet several times during the year to discuss specific needs in research and extension programming.

Forestry and Wildlife Advisory Committees

Forestry, Forest Products, and Wildlife and Fisheries have advisory committees that meet yearly to identify issues and recommend research and extension programs to address those issues. Actions on these recommendations are reported at the next yearly meeting and further recommendations are made as warranted.

Other Sources of Needs Identification

MSU-ES, MAFES, and FWRC are continually looking for ways to interface with stakeholders to ensure that their needs are being addressed. The Agriculture and Forestry Summit and meetings with key partners are two examples of ways needs are identified.

Key Partners

MSU-ES, MAFES, and FWRC meet 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, and numerous state and regional commodity groups.

C. Program Review Process

There have been no significant changes in Mississippi State University's program review processes since submission of our joint 5-Year Plan of Work.

D. Evaluation of the Success of Multi and Joint Activities

This evaluation of the success of the multi and joint activities is guided by the four criteria identified in the Guidelines for the State Plans of Work. Answers to each of the four questions are provided below.

1. Did the planned program address the critical issues of strategic importance, including those identified by the stakeholders?

Yes. Once the draft guidelines for AREERA were published, MSU initiated its new planning process. The priority planning groups (PPGs) for each of the 26 PPAs developed their plans for both research and extension. This process has continued with the 16 PPAs established after restructuring.

To provide guidance for the program planning process, the PPGs not only used their professional expertise, but also had information at their disposal from the following sources:

- The stakeholder input process described above, including county and program advisory councils, state-level program advisory councils, research and extension center advisory meetings, key partners, and other sources;
- Outreach council meetings for research and extension;
- The county-level program delivery agreements developed by each local extension agent; and
- Professional peer review of the draft plans of work.

2. Did the planned program address the needs of under-served and under-represented populations of the State?

Yes. Through the stakeholder input process described above, needs of all clientele groups, including under-served and under-represented groups, were determined. (Most of the advisory groups mentioned in the stakeholder input process are required to be representative of all potential clientele.)

In addition to the stakeholder groups mentioned above, the outreach council recommended a series of meetings around the state. These meetings were designed specifically to obtain input from under-served and under-represented populations.

Another indicator of the extent to which programs are meeting the needs of under-served and under-represented groups is the percentage of contacts made by extension faculty. Of the 3,233,752 total contacts made by Extension, 1,130,283 (35%) were made to African-American, Native-American, or other under-served populations. This percentage is almost exactly the percentage of these under-served groups in the state population.

3. Did the planned program describe the expected outcomes and impacts?

Yes. Each priority program area developed one or more program plans. In each program plan, expected outputs and outcome/impacts were developed. Most of the outcomes identified were intermediate- or long-term outcomes.

4. Did the planned program result in improved program effectiveness and/or efficiency?

Yes. The creation of PPGs has provided a mechanism for researchers and extensionists to interact in the planning and implementation process. A required part of the joint plan of work is the sharing of information between the two "camps." The result has been the creation of numerous joint programs.

This result has been evident in some of the key theme reports provided under each of the five goals. Below are additional examples of these joint efforts.

Southern Regional Aquaculture Center

The U.S. consumes increasingly greater amounts of fishery products than it produces. A strong domestic aquaculture industry is needed to increase production of fish and shellfish and reduce dependency on foreign suppliers. Centers provide a mechanism for assessing aquaculture industry needs, establishing research and extension priorities, and implementing regional research and extension projects designed to directly impact commercial aquaculture development.

Components of the Southern Regional Aquaculture Center include an Administrative Center, Board of Directors, Industry Advisory Council and Technical Committee. The Board of Directors establishes overall regional research and extension goals and priorities, makes selection of proposals for funding and allocates fiscal resources. An Annual Plan of Work will be submitted to USDA outlining each program element and its compatibility with the National Aquaculture Development Plan and with regional priorities. 1862 and 1890 Land Grant institutions, Sea Grant institutions, other state, territorial or federal institutions, and non-profit private research organizations with demonstrated expertise and capabilities in aquaculture are eligible to participate in the regional programs.

The Southern Regional Aquaculture Center provides for coordination and prioritization of research and extension efforts across the southern U.S. This results in more efficient use of research funds and helps ensure that technology transfer occurs in an efficient and timely manner.

Advanced Spatial Technologies for Agriculture (ASTA)

There is a need to investigate site-specific technologies as they pertain to natural resource management, precision farming, agribusiness and decision making in agriculture and to produce

new knowledge concerning applications of these technologies in Mississippi and the Nation.

MAFES instituted the Advanced Spatial Technologies for Agriculture (ASTA) program to coordinate efforts on site-specific technologies. As part of the ASTA program, MAFES and MSU-ES faculty are conducting research and educational programs on site specific, precision farming technologies with regard to soil fertility management; pest management strategies; yield monitoring; problems associated with drainage, irrigation, aquaculture and other environmentally sensitive issues; and economic costs and returns associated with site specific production.

Some developments from this program include: 1) an improved superior cotton yield sensor, 2) prescriptions for nitrogen fertilizer in cotton that will improve average yield and reduce fertilizer runoff, 3) a pest management system that reduced insecticide costs by as much as 30%, and 4) variable rate prescriptions for a herbicide application system that can reduce material application rates significantly.

Nutrient Management and Water Quality Task Force

Management of animal waste has become a major environmental issue, with serious economic consequences for poultry and livestock producers. Improper animal waste disposal can negatively affect water quality.

MAFES Scientists and MSU-ES Specialists have joined together to form a Nutrient Management and Water Quality Task Force. This task force is designed to help address both immediate and long-term problems related to nutrient management and water quality issues. The task force formulates plans of action and helps to facilitate team building to address these issues in a timely manner.

This team has helped to initiate research on the effect of nutrient management on watersheds, and have aided in the development and dissemination of best management practices to help producers deal with these issues.

E. Multistate Extension Activities

MSU-ES identified 25 programs that meet the requirements for multistate and were supported by Smith-Lever funds. Two additional programs were identified in the Plan of Work update. Many other programs meet the requirements for multistate, but were not supported by Smith-Lever funds.

Form CSREES-REPT (2/00) is provided below to summarize the fiscal activity for those multistate programs supported by Smith-Lever funds.

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)**

Institution Mississippi State University
State Mississippi

Check one: **Multistate Extension Activities**
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Actual Expenditures

Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Southern Extension & Research Activities	67,195.54	70,127.51	43,725.59	52,440.33	30,507.51	28,940.64	35,713.33
Money and You	5,873.56	5,732.24	15,285.16	5,667.54	15,491.99	15,628.09	17,361.70
Mid-South Fair	13,221.89	30,330.75	22,573.44	19,281.12	15,881.07	19,061.03	17,023.02
Southern Reg. Middle Managers Conf.	5,973.00	9,789.92	5,585.38	2,139.07	1,917.97	1,931.68	201.13
Southern Reg. Volunteer Leaders Forum	115,672.75	29,749.83	23,483.63	12,216.28	13,049.26	13,359.60	15,446.90
Program Leadership Conference	40,495.01	43,495.19	40,346.28	23,838.18	22,028.74	22,061.14	23,998.38
National 4-H Congress	26,725.25	22,819.95	34,145.01	28,037.74	25,275.08	23,063.71	27,537.44
Tri-State Ministers Meeting	6,509.05	6,613.24	5,191.26	9,618.58	4,955.97	3,968.25	4,215.91
MS-LA Family Matters Conference	51,604.09	10,849.15	14,796.88	3,608.09	11,765.45	11,843.81	0.00
Franklinton Beef and Dairy Project	51,545.48	48,839.75	56,240.95	74,740.30	70,504.85	66,016.55	32,972.71
Cotman Project	12,959.98	12,553.79	10,995.03	14,925.51	19,814.88	19,433.00	22,146.35
Tri-State Soybean Forum	31,871.53	30,357.34	22,341.97	20,024.21	17,245.42	17,010.31	15,692.70
Delta States Farm Management Group	1,181.62	10,951.45	7,212.01	6,359.09	12,824.41	9,619.39	9,251.90
Beltwide Cotton Conference	9,426.63	2,737.86	2,885.82	2,575.61	7,805.23	7,520.66	9,705.15
Southern Reg. Extension Animal Scientists	6,676.73	7,059.07	2,305.25	2,558.93	1,740.95	1,756.18	1,767.72
Southern Forage & Pasture Improve. Conf.	4,925.84	0.00	1,213.80	1,208.38	1,247.51	1,257.41	6,291.55
National Ext. Livestock Specialists Conf.	10,555.36	0.00	0.00	2,558.93	1,740.95	1,756.18	1,767.72
Commercial Vegetable Recommendations	0.00	0.00	1,783.75	1,785.26	1,844.95	1,862.07	5,254.54
Greenhouse Tomato Short Course	0.00	0.00	3,576.44	3,639.71	3,757.96	3,792.36	14,637.08
National Catfish Database Committee	0.00	0.00	4,905.91	19,629.46	19,967.17	14,008.86	0.00

National Extension Technology Conference	0.00	0.00	2,238.50	5,615.68	4,657.61	4,695.25	11,135.36
S. Reg. Comm. on Pub. Affairs/Farm Mgt.	0.00	0.00	7,568.69	7,126.12	11,615.46	11,033.77	4,601.93
Southern Comm. Development Institute	0.00	0.00	1,741.40	6,936.71	10,972.67	8,312.96	1,566.92
Tri-State Fruit & Vegetable Growers	0.00	0.00	7,071.11	6,899.15	9,249.00	12,028.71	15,202.89
MS-LA Blueberry Growers Conference	0.00	0.00	3,234.52	2,970.31	4,982.79	10,054.56	9,877.59
Delta H.O.P.E. Tri-State Initiative						14,232.81	15,005.46
Tri-State Workforce Initiative						0.00	16,919.93
Total	462,413.40	342,007.02	340,447.76	336,400.31	340,844.85	344,248.98	335,295.31

Form CSREES-REPT (2/00)

Summary of Multistate Extension Activities

Southern Extension and Research Activities - A total of 30 information exchange groups (IEGs) and task forces (TFs) composed of regional representation meet to identify possible solutions to problems through research and extension. The common discussion leads to regional publications and programs.

Money and You - This project consists of an eight-lesson electronic curriculum designed to help limited resource families (particularly TANF benefit recipients) learn how to more efficiently manage their resources. The curriculum is being implemented in Mississippi primarily as a master volunteer program. The curriculum is now in full implementation stage with instruction provided by six area family resource agents and six county directors with family resource management programming responsibilities.

Mid-South Fair - Seventeen competitions and attendance contests are part of the five state collaborative effort with the Mid-South Fair held in Memphis, TN. States participating include: TN, MS, MO, AR, and KY. MS involvement includes preparation and participation of county delegations and specialists preparing and running the competitions, awards ceremonies and evaluation of contests.

Southern Region Middle Management Conference - This conference is comprised of area, district, and regional administrators from the southern states. The conference is held every other year hosted by different states. The primary purpose of the conference is professional development, idea sharing, and joint programming. The conference includes exhibits, breakout seminar sessions usually conducted by middle managers addressing personnel and program issues, and keynote speakers. Middle managers interact and develop professional relationships, and address concerns and issues that apply to the region.

Southern Region Volunteer Leader Forum - Thirteen states, Puerto Rico and the Virgin Islands cooperate in planning this volunteer training opportunity held in Rock Eagle, Georgia. Over 600 volunteers participate in workshops, super seminars and social events. Agents prepare volunteers for participation in the conference and assist them in presenting workshops upon their return. MS agents and specialists present workshops and assist with planning and coordination of the event held at Rock Eagle, GA.

Program Leadership Conference - Program leaders in Agriculture/Natural Resources, 4-H/Youth, Family and Consumer Sciences, Community Development, Program and Staff Development, and Computer Applications from around the Southern Region meet annually to identify issues and plan regional programs. A primary focus of this conference last year was the development of the Cooperative Extension Curriculum Project, which focuses on developing an electronic inservice education curriculum for the region, with interest being shown by other regions as well.

National 4-H Congress - 48 states participate in this national event. Mississippi specialists have served on the design team and provide leadership to specific committees. Over 30 youth from MS are involved in this four-day event that includes educational workshops, service learning opportunities, and keynote speakers. Agents are involved in the preparation of youth for this event.

Tri-State Minister Meeting - This meeting is a collaborative effort between the states of Arkansas, Mississippi, and Tennessee Extension Services. These systems have been providing educational programs to bi-vocational and community leaders in the region for more than 15 years. As issues have changed, Extension has changed to meet the needs of citizens in the tri-state area. A key ingredient for correcting these

issues and problems is the educational training offered through a Tri-State Conference, which has become a model for other states considering such an activity.

Franklinton Beef and Dairy Project - Joint program to conduct research and provide educational programs in beef and dairy between LA and MS. This project has provided most of the direction for dairy research and extension in MS. Results from several of the projects are discussed in the key theme reports under the five major goals in this report.

Cotman Project - This project provides educational information on cotton management including crop mapping, weather data use and early termination procedures used in the mid-south region.

Tri-State Soybean Forum - The purpose of this forum is to provide educational information for agents and specialists on soybean production and management from a multi-state perspective (MS, LA, AR).

Delta States Farm Management Group - This group collaborates on Extension farm management education and research programming opportunities in the MS, LA, AR multi-state area.

Beltwide Cotton Conference - This conference provides programming update information for agents and specialists on all cotton production and marketing areas on a multi-state basis, throughout the "cotton belt". Specialists and agents interact with researchers and bring back important information to share with Mississippi cotton producers.

Southern Region Extension Animal Scientists - This meeting facilitates programming update and new program ideas to Extension specialists with a multi-state focus in the 13 state Southern Region.

Southern Forage and Pasture Crop Improvement Conference - This conference allows Extension and research professionals to identify educational programs on the latest issues regarding livestock utilization of forage and pasture.

National Extension Livestock Specialists Conference - This conference provides program updates and information on innovative programs to Extension professionals from all equine and meat animal-producing states. Retirements and budget cuts have limited MSU-ES participation in this important conference.

Commercial Vegetable Recommendations – This group meets annually to determine regional recommendations for vegetable publications and programs.

Greenhouse Tomato Short Course – For the past 10 years, MSU-ES has hosted this course for growers around the region and nation. This past year, specialists from around the region provided instruction to 105 participants from 22 states and 4 countries.

National Extension Technology Conference – NETC provides an opportunity for sharing and learning about innovative types and uses of information technology. MSU-ES personnel in computer applications and communications attend the conference and bring back information to share with Mississippians.

Southern Region Committee on Public Affairs/Farm Management – Agricultural economics Extension specialists participate on this committee yearly. Information shared at the committee meetings provided

valuable input into the Farm Bill training provided by MSU-ES during the past year.

Southern Community Development Institute – This institute provides Extension specialists, regional directors, and Extension agents with an intensive, state-of-the-art training program related to community development. Participants learn the current nature of a community’s economic, social, and service infrastructure; the essential elements of sound community development programming; and tools and strategies for working with communities on economic, social, and service infrastructure enhancements. Community development experts from around the region provide the instruction.

Tri-State Fruit and Vegetable Growers – MS, AR, and LA have cooperated on this conference for the past five years. The conference includes educational sessions on direct marketing and fruit and vegetable production. Trade show vendors include fruit tree nurseries, seed companies, chemical companies, equipment manufacturers, fertilizer manufacturers, drip irrigation companies, box companies and a number of other suppliers of interest to fruit and vegetable growers. The program has four concurrent tracks with sessions on fruits, vegetables, blueberries and organic production.

MS-LA Blueberry Growers Conference - Mississippi hosts this event annually for blueberry growers in cooperation with Louisiana. Growers learn production and marketing techniques at the conference, which has led to the formation of a marketing cooperative to increase sales.

Delta H.O.P.E. (Healthy Options for People through Extension) Tri-State Initiative – provides the implementation and evaluation of a classroom-based intervention that: 1) encourages short bouts of physical activity integrated with academic lessons (TAKE 10!), and 2) presents a cast of fun characters that help teach young children physiology and lifelong healthy behaviors through read aloud books, games, dolls, and informational videos (OrganWise Guys - OWG). The target population for this project is 30,000 students enrolled in grades K-5 and their teachers (n = 1,500) in the Mississippi Delta Region. The Mississippi Delta Region is defined by the Lower Mississippi Delta Commission as a 219-county strip along the Mississippi River in Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee (including counties served by the Delta NIRI).

Tri-state Extension Coalition Workforce Preparedness Program - Changes in technology and jobs make it hard for parents and teachers to help prepare young people for a workforce that is so different from the one the adults entered years ago. In the Mississippi Delta, which includes parts of Mississippi, Arkansas, and Louisiana, the problem is especially acute. Job options are limited, and youth there often grow up unaware of the wide range of employment opportunities available. The coalition provides opportunities for 8- to 12-year-olds to develop age-appropriate skills related to successful futures in the workplace. An existing national 4-H curriculum called WOW! (Wild Over Work) is delivered through adult-youth partnerships. This effort is conducted in collaboration with the Southern Rural Development Center multi-state initiative on workforce preparation.

F. Integrated Research and Extension Activities

As mentioned earlier, Mississippi State University chose to restructure its planning process after AREERA, both to meet federal requirements and to better serve its stakeholders within the state. This process led to the establishment of 26 priority program areas, 16 of which developed integrated research and extension plans.

Fiscal activity for these two plans is described in the two forms provided below: Form CSREES-REPT (2/00) (Hatch funds) and Form CSREES-REPT (2/00) (Smith-Lever funds). Although it may appear there are discrepancies between the two forms, some integrated activities may be supported with Smith-Lever funds but not Hatch funds, and vice versa.

Progress updates are provided for these activities in the planned program summaries above in Section A.

**U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Multistate Extension Activities and Integrated Activities
 (Attach Brief Summaries)**

Institution Mississippi State University
State Mississippi

Check one: **Multistate Extension Activities**
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Actual Expenditures

Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005*	FY 2006*
Agribusiness							
Beef and Forage	278,963	371,445	108,025	92,639	65,850		
Catfish							
Corn	23,980	50,034	46,309	39,224	22,787		
Cotton	53,094	60,223	215,998	150,658	158,606		
Dairy			143,976	310,472	435,255		
Food and Food Products	425,342	307,201	277,235	279,633	165,828		
Forest Products							
Forestry							71,956.30
Horticulture	170,218	133,758	117,238	15,736	26,686	18,650	79,688.22
Poultry and Products		12,211				19,227	63,839.10
Rice	10,815	16,801	47,637	64,502	73,387		
Safety							
Soybeans	1,073	9,877	4,601				
Swine							
Wildlife and Fisheries							
Agronomic Crops						584,759	523,689.07
Animal Science/Forages						275,952	177,367.06
Aquaculture						13,739	5,362.56

Environment/Nutrient Management						36,779	3,973.26
Risk/Farm Management						1,318	16,188.93
Nutrition and Food Safety						780	
Total	963,485	961,550	961,019	952,864	953,399	951,204	942,064.50

Note: In programs with no amounts listed, integrated activity exists from non-federal sources.

***FY 2005 and 2006 figures reflect changes in program descriptions as provided in the 2005-2007 Plan of Work Update.**

Form CSREES-REPT (2/00)

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Institution Mississippi State University
State Mississippi

Check one: **Multistate Extension Activities**
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Actual Expenditures

Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005*	FY 2006*
Agribusiness	387,174.60	437,985.80	386,968.78	368,175.51	119,207.27		
Beef and Forage	288,624.99	232,441.97	394,553.32	256,637.50	521,430.58		
Catfish	71,862.72	100,967.05	77,210.11	113,103.68	134,415.34		
Corn	73,613.51	62,430.72	69,365.54	91,702.76	200,152.18		
Cotton	225,968.90	235,905.15	246,342.30	425,432.35	483,369.46		
Dairy	52,168.17	28,900.17	50,685.18	37,577.87	66,169.25		
Food and Food Products	37,140.07	24,296.79	24,951.99	37,827.20	43,866.12		
Forest Products	36,467.68	41,322.87	23,344.24	38,383.71	21,238.55		
Forestry	433,066.92	396,201.79	407,270.95	428,114.88	685,402.67	231,596.67	175,608.93
Horticulture	591,804.37	531,946.22	685,789.67	404,495.40	504,534.03	450,505.88	487,861.08
Poultry and Products	53,976.15	48,522.70	36,877.01	16,962.18	92,537.56	33,767.27	25,430.58
Rice	20,894.55	42,943.41	50,844.19	40,366.68	90,598.73		
Safety	45,512.75	63,989.25	122,336.87	51,954.23	20,357.08		
Soybeans	173,587.21	144,518.95	146,201.11	135,513.02	335,494.79		
Swine	49,417.67	26,482.71	16,514.06	29,643.66	73,728.09		
Wildlife and Fisheries	109,008.42	86,469.30	168,966.68	169,281.54	392,934.83	174,398.68	251,197.77
Agronomic Crops						426,641.49	417,494.04
Animal Science/Forages						226,862.39	190,202.61
Aquaculture						97,393.78	232,210.14

Environment/Nutrient Mgt.						140,170.12	54,353.59
Risk/Farm Management						67,675.09	61,181.16
Nutrition and Food Safety							
Total	2,650,288.10	2,505,324.87	2,908,222.00	2,645,172.17	3,785,436.53	1,849,011.37	1,895,539.90

***FY 2005 and 2006 figures reflect changes in program descriptions as provided in the 2005-2007 Plan of Work Update.**

Form CSREES-REPT (2/00)

Summary of Integrated Research and Extension Activities

Beef and Forage – The goal of MAFES beef and forage research is the creation of knowledge through fundamental and applied research. The focus of these research programs is on enhancing and/or developing economically efficient and environmentally acceptable systems for providing consumers an abundance of beef products that are safe, nutritious, or otherwise have highly desirable attributes -- and to assuring that the producers and firms that comprise the beef/forage industry are economically viable -- both now and for the future. These objectives are being addressed through the following projects:

Evaluation & Development of Beef Cattle/Forage/Management
Determination of Timp-2 in Bovine Follicular Granulosa Cells and in Follicular Development

Corn – The goal of MAFES corn research is the creation of knowledge through fundamental and applied research. The focus of these research programs is on enhancing and/or developing economically efficient and environmentally acceptable systems for providing consumers an abundance of corn products that are safe, nutritious, or otherwise have highly desirable attributes -- and to assuring that the producers and firms that comprise the corn industry are economically viable -- both now and for the future. These objectives are being addressed through the following project:

Improving Mississippi Corn Production

Cotton – The goal of MAFES cotton research is the creation of knowledge through fundamental and applied research. The focus of these research programs is on enhancing and/or developing economically efficient and environmentally acceptable systems for providing consumers an abundance of cotton/fiber products that are safe, nutritious, or otherwise have highly desirable attributes -- and to assuring that the producers and firms that comprise the cotton industry are economically viable -- both now and for the future. These objectives are being addressed through the following projects:

Weed Control and Harvest for Yazoo - MS
Cropping Management Systems
Identification & Management of Vegetable Insects

Dairy – The goal of MAFES dairy research is the creation of knowledge through fundamental and applied research. The focus of these research programs is on enhancing and/or developing economically efficient and environmentally acceptable systems for providing consumers an abundance of dairy products (milk, cheese, butterfat, etc.) that are safe, nutritious, or otherwise have highly desirable attributes -- and to assuring that the producers and firms that comprise the dairy industry are economically viable -- both now and for the future. These objectives are being addressed through the following project:

Dairy Management for Mississippi

Food and Food Products – The goal of MAFES food and food products research is the creation of knowledge through fundamental and applied research. The focus of these research programs is on 1) processing and adding value to raw products that can result in the development of new food and non-food markets for agricultural commodities and overall enhanced economic activity for Mississippi; 2) human nutrition research for maintenance of optimal health for all population groups, especially those at greater risk for nutrition-

related diseases, e.g., infants, elderly, new immigrant groups; and 3) on the causes and prevention of food-borne illnesses and food processing to increase food safety. These objectives are being addressed through the following projects:

Evaluation of New Cultivars
Plant Performance and Fruit Quality

Horticulture: – The goal of MAFES horticulture research is the creation of knowledge through fundamental and applied research. The focus of these research programs is on enhancing and/or developing economically efficient and environmentally acceptable systems for providing consumers an abundance of horticultural products (i.e., vegetables, fruits, and ornamentals) that are safe, nutritious, or otherwise have highly desirable attributes -- and to assuring that the producers and firms that comprise the horticulture industry are economically viable -- both now and for the future. These objectives are being addressed through the following project:

Cultural Studies in Ornamentals

Rice – The goal of MAFES rice research is the creation of knowledge through fundamental and applied research. The focus of these research programs is on enhancing and/or developing economically efficient and environmentally acceptable systems for providing consumers an abundance of rice products that are safe, nutritious, or otherwise have highly desirable attributes -- and to assuring that the producers and firms that comprise the rice industry are economically viable -- both now and for the future. These objectives are being addressed through the following project:

Rice Weed Control in Mississippi

In all of the areas mentioned above, the MSU-ES provides the extension efforts associated with the projects. MSU-ES provides dissemination of information and educational programming through group meetings, workshops, short courses, newsletters, and one-on-one consultations with producers.