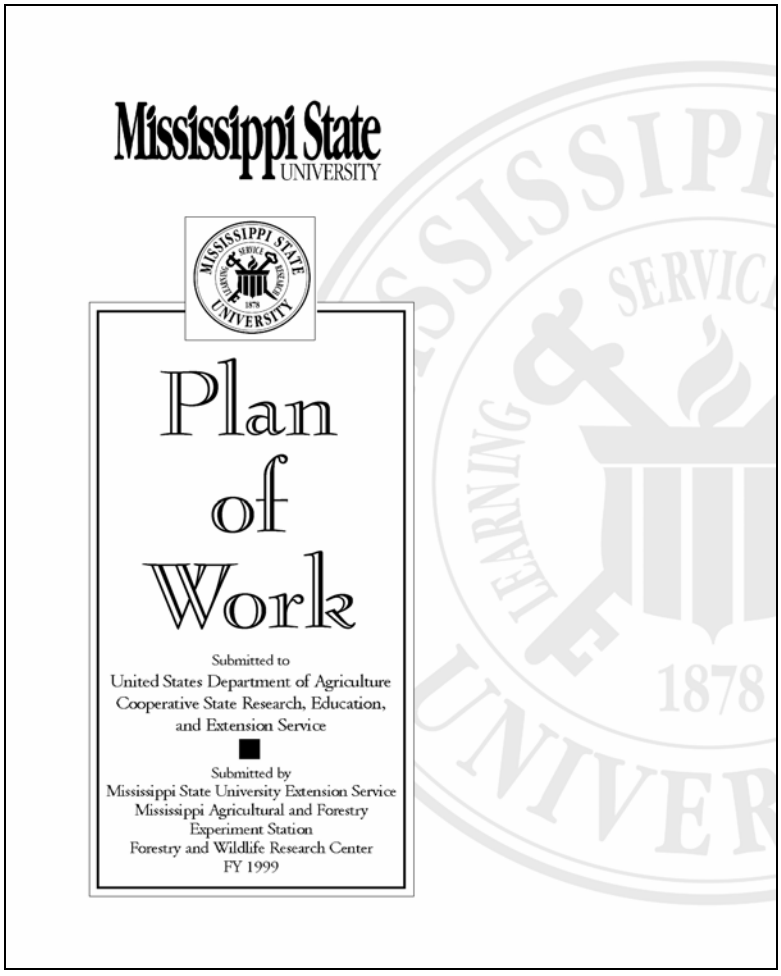
FY 2002 Annual Report of Accomplishments and Results

Submitted to

United States Department of Agriculture
Cooperative States 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, including the Mississippi State University Extension Service (MSU-ES), the Mississippi Agricultural and Forestry Experiment Station (MAFES), and the Forest and Wildlife Research Center (FWRC), responded to the AREERA Plan of Work requirements by restructuring its program planning process. Based on clientele and reporting needs at the state and local levels, 26 priority program areas (PPA) were established. Based on this new system, outputs and outcomes were determined. The outcomes were primarily intermediate and long-term outcomes, with this first year devoted to establishing the research and extension programs and establishing baselines for future measurement of outcomes. Short-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 in parentheses after the PPA.

- PPA: Beef & Forage (Alternative Marketing; Forage Improvement; Genetic Improvement; Herd Health; and Nutrition)
- PPA: Catfish (Processing Technology; Fish Behavior; Fish Health; Harvest Technology; Nutrition; and Water Quality)
- PPA: Corn (New Technologies; Planting and Establishment Systems; and Profitability of Cropping Systems)
- PPA: Cotton (Best Management Practices; Conservation Tillage; Disease and Nematode Management; Harvesting, Handling and Ginning; Variety Evaluation and Selection; Weed Control; Crop Price Rations and Risk Management; Irrigation; and Utilizing GIS/GPS in Production)
- PPA: Dairy (Cost of Production; Facility Management; Mastitis Control; Nutrition; and Reproductive Management)
- PPA: Forestry (Forest Resources Management and Use)
- PPA: Horticulture (Horticultural Crops)
- PPA: Poultry and Products (Reducing Malodor and Pathogens; Lipoproteins and Egg Mycoplasma; Fertility in Broiler Breeders; Access to Technical Information; Cocci Vaccine Development; and Poultry Waste Management)
- PPA: Rice (Insect Control; Management and Control of Diseases; Genetics, Breeding and Variety Development; Soil Fertility; and Weed Control)
- PPA: Soybeans (Best Management Practices; Irrigation and Drainage Practices; Planting Dates and Variety Selection; Site Specific Soybean Management; Weed Control)
- PPA: Swine (Technologies and Management)
- PPA: Wildlife & Fisheries (National Catfish Information Database)

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	Other
Beef and Forage	25		2	71,073	
Catfish	26	2		9,118	*Computer Software: FISHY 2002*
Corn	13	1		24,999	
Cotton	43	3	1	93,107	
Dairy	7			22,327	
Forestry	2			136,552	
Horticulture	23	2	5	163,459	
Poultry and Products	39	1		4,748	
Rice	13			11,901	
Soybeans	25	2	11	62,377	
Swine	2			1,989	
Wildlife and Fisheries	1		1	68,682	

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. Producing milk at a profitable level in Mississippi's hot and humid environment is a challenge. Nutritional, physiological, and environmental factors all influence the level of production and profitability in today's dairy operations. Heat stress in dairy cattle is a major problem in Mississippi and throughout the southern region that can result in significant economic losses in production. MAFES and MSU-ES Scientists are conducting experiments on types of forages available for dairy animals, feed ingredients that positively influence milk production during periods of heat stress, and alternative methods of cooling heat stressed cows. Lactating

dairy cattle are being evaluated in modified housing units outfitted with novel fan and sprinkler combinations designed for more effective cooling.

b. The ability of heat-stressed dairy animals to be cooled based on body size may help the southern dairy industry if animals are selected for a size that can efficiently and economically produce milk in hot, humid climates. Alleviating the effects of heat stress in dairy cattle will increase reproductive efficiency, improve cow comfort and increase or maintain profitable levels of milk production during summer months

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

d. Integrated Research and Extension

Key Theme - Biotechnology

a. Consumer preferences affect the price being paid for genetically modified products in the United States and the European Union. Data on consumer preference and economic valuation are needed to help Mississippi producers and marketers to make informed, economically sound decisions regarding production of these products. Statistical and econometric methods are being employed to measure consumer attitudes towards genetically modified products. MAFES and MSU-ES personnel have collected data on consumer preferences by a variety of methods. Contingent valuation surveys are often used to collect information on willingness to pay for products. Methods include focus groups, laboratory experiments and experimental auctions and are applied to the United States and European Union to capture cultural differences among consumers.

b. Agribusinesses and agricultural producers are in need of information regarding consumer demand for their products. Because of cost savings provided by genetically modified seed, farmers have been quick to adopt such technology. However, consumers remain concerned. This research should assist agricultural producers and the biotechnology industry in developing successful promotional and marketing campaigns by identifying the factors that affect consumer acceptance of genetically modified foods. This study should also have an impact on public policy and international trade. Export markets are important for US agricultural producers and this research should assist in identifying the future viability of exporting genetically modified crops.

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

d. Integrated Research and Extension

Key Theme – Niche Market

a. Prices for various crops and agricultural products being produced in the Mississippi Hill and Delta areas have been suppressed for the past 27 years, and many farmers are finding it difficult to stay in business. Alternative crops and/or value-added products are needed to provide additional sources of income for Mississippi producers. MAFES annually solicits proposals for research on alternative crops and/or value-added products with potential for Mississippi producers. Funds from this project support research on alternative crops and value-added products by MAFES and MSU-ES personnel. Funds are also used to help support MAFES technology transfer and MSU-ES educational programs to aid producers in the adoption of

newly discovered alternative crops or products.

b. Results from this research should enable many small-to medium-sized farmers to become profitable from growing and selling alternative crops or value-added products to supplement their income from traditional crops. Alternative crops and /or products being evaluated include native species for medicinal compounds, vegetable crops, ornamentals, floricultural crops, sweet potatoes, and muscadines (wild grapes).

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

d. Integrated Research and Extension

Key Theme – Agricultural Profitability

a. The cost of production of channel catfish has become a important issue as catfish supplies have increased and prices have declined in recent years. For U.S. catfish producers to be successful, they must find ways of cutting production costs. MAFES/MSU-ES faculty members are conducting research to evaluate effects of dietary protein and animal protein concentrations on production of channel catfish stocked at various densities. They are also evaluating the use of high frequency scanning sonar to study catfish behavior and to provide reliable counts of the number of catfish occupying a given pond.

b. Data from this project coupled with data from other studies may allow the reduction or elimination of animal proteins in catfish feeds, which should result in a modest reduction in feed cost. Development of acoustic instrumentation will allow fish biomass to be assessed in commercial grow-out ponds and will be a valuable research tool for studying fish behavior.

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

d. Integrated Research and Extension

Key Theme – Emerging Infectious Diseases

a. Few crops require the labor intensity in production, harvesting, and marketing found in vegetable crops. Commercial growers of both field and greenhouse vegetables need assistance to increase yield, reduce costs, and thereby improve profitability. The major needs of Mississippi growers have been identified during the Central Mississippi Research & Extension Center Advisory Group meetings. MAFES and MSU-ES faculty are conducting research and demonstration trials of cultivars, cultural practices, and pest control strategies at locations in North, Central, and South Mississippi.

b. Identification of a tomato disease new to Mississippi in 2001 will allow growers, researchers and extension staff to respond quickly and correctly to minimize the effect of infestations. Cultivar evaluations help growers maximize quality, profit, and integrated pest management opportunities. Synthetic and animal waste-based fertilizer research helps growers improve farm efficiency and reduce nutrient loss to the environment. The MAFES/MSU-ES team is assisting several new and existing growers in expanding the MS vegetable industry.

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

d. Integrated Research and Extension

Key Theme – Plant Production Efficiency

a. Grass and broadleaf weeds result in substantial losses in rice in either conventional tillage or reduced tillage systems. MAFES and MSU-ES faculty conduct herbicide trials in the Mississippi Delta to evaluate the efficacy of new and existing herbicides. Studies are also conducted to monitor weed species and economic losses due to infestation.

b. Research directly contributed to the Sec. 3 registration of Regiment and Ricestar in the 2002 Mississippi rice crop. Estimated revenues for site to be treated for propanil and quinclorac resistant barnyardgrass alone, $1,323,822 to $9,266,758.

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

d. Integrated Research and Extension

Key Theme - Aquaculture

a. Recent MAFES research indicates that Mississippi catfish producers should construct deeper ponds to maintain a useful water space and extend the life of ponds. MSU-ES agents have recommended catfish producers build ponds with a 5- to 6-feet water depth instead of the typical 4-feet deep pond.

b. Building deeper catfish ponds will maintain a useful water space in ponds and extend continuous use of ponds five to 10 years over ponds that contain only 3 to 4 feet of water. Conservation of water and electricity are also possible with ponds containing greater water depth. Estimated total savings over the life of a pond are expected to exceed $100 per acre.

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

d. Integrated Research and Extension

Key Theme – Animal Production Efficiency

a. Agricultural producers and agribusiness professionals are all immediately affected by changes in government programs and regulations as well as by changes in the market place. With more capital at risk than ever before and in an environment that is affected by global as well as local events, farmers, livestock producers, bankers, and input providers have a greater need than ever for timely and relevant information. MSU-ES personnel in the Department of Agricultural Economics in cooperation with colleagues from the MAFES have begun publishing a monthly newsletter, *Agricultural Economic and Policy Perspectives*, to provide Extension clients across the state and region with the most up-to-date information on issues affecting their livelihood. Articles in the newsletter have focused on commodity and conservation programs in the 2002 Farm Bill, taxation and regulatory issues affecting crop and livestock producers, trade issues, and factors affecting market conditions for Mississippi's major agricultural commodities.

b. This newsletter is delivered directly to roughly 500 recipients through both print and electronic media. In addition, many more people access the newsletter through the *MSUCares* website.

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

d. Integrated Research and Extension

Key Theme - Aquaculture

a. Mississippi's saltwater sportfishing industry contributes more than $293 million to the economy and generates about 4,000 jobs. In spite of its popularity, the sport has not grown to be a year-round activity due to the lack of a dependable source of live bait. Most of the live bait purchased by recreational fishermen is caught in the wild. Mississippi Agricultural and Forestry Experiment Station researchers are attempting to develop an economically viable baitfish production system that will provide a year-round supply of live bait to the state's saltwater recreational fishing industry. Researchers at Mississippi State University's Coastal Research and Extension Center and Coastal Aquaculture Unit are designing a tank-pond production system for the popular live bait.

b. After a 12-week period in 2002, the team harvested bull minnows that were 2 1/2 inches long and weighed 3 grams each. They found that water temperature is a critical factor in spawning and hatching, with temperatures from 24 to 28 degrees (Celsius) being optimal. When the technical, biological and economic parameters of the bull minnow production system are optimized, it should be capable of providing a year-round supply of live bait, giving farmers a new aquaculture product.

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

d. Integrated Research and Extension

Key Theme – Animal Production Efficiency

a. Poultry houses are an environmentally dynamic. Producers' challenge is to minimize energy inputs and optimize poultry production. MSU-ES has been offering programming in environmental management to

producers. The focus of these workshops has been energy conservation practices such as: 1) closing the bottom of curtains, 2) putting flaps on the top of curtains, and 3) sealing up air leaks in the house.

b. Approximately 30% of the poultry houses are using the energy conservation measures. Growers indicate the savings are approximately $100 per house for a grow out in winter temperatures (3 batches at $300 per house per year). With approximately 6000 broiler houses in Mississippi, producers are saving $540,000 a year in energy costs.

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

d. State-specific

Key Theme - Aquaculture

a. Feed is the single largest production cost for raising catfish, accounting for about 50 percent of the variable operating costs. Protein is an expensive element of the feed and is added to catfish diets from either plant or animal sources. MAFES researchers studied different catfish diet formulations, seeking the most inexpensive diet that still maintained the best growth. The fish were fed once a day on one of four diets for two growing seasons. The diets contained either 28 or 32 percent protein, with or without animal protein.

b. Producers typically feed a diet of 32 percent protein, but they found success in a diet of 28 percent protein with little or none of it animal protein. Research results show producers can save $8 to $10 a ton by switching to a 28 percent protein diet from one that includes 32 percent. A farmer with 500 water acres could save as much as $25,000 a year by reducing the costs of feed.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Plant Production Efficiency

a. Although cotton planting in Mississippi's South Delta area got off to a rather timely start, cool temperatures, wind and blowing sand damaged the crop. Growers needed assistance with crop recovery and replanting decisions and recommendations. Mississippi State University Extension Service agents evaluated cotton fields on a field-by-field basis, systematically evaluating stands for adequate plant populations, overall crop health and environmental/insect damage.

b. This assistance provided the needed information for salvaging crops or replanting individual fields. Inadequate stands can easily lower yields by 20 percent, which converts to about $100 per acre in lost or unrealized income based on potential yields of 1,000 pounds of lint per acre. For the approximately 10,000 acres of cotton in this area, a potential income of about $1 million was protected for the 2002 crop.

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

d. State-specific

Key Theme - Aquaculture

a. Compounds produced by a blue-green alga in ponds can cause channel catfish to develop an undesirable musty or muddy taste known in the industry as off-flavor, one of the most serious problems facing catfish farmers. Researchers in Mississippi State University's departments of Forest Products and Wildlife and Fisheries developed the use of hydrophobic compounds that have the ability to absorb various chemicals but are insoluble in water.

b. The technique proved that 85 percent of the chemicals that cause off-flavor can be absorbed in 24 hours by adding a small amount of an organic substance to pond water. This process is both environmentally friendly and cost effective. The findings to date suggest some common products may offer immediate help in controlling a problem that costs catfish producers nearly $60 million annually.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Plant Health

a. Boll weevils were cotton's No. 1 pest, destroying substantial yields and costing growers $50-$60 per acre in damage. Individual farm eradication programs can be costly for farmers and ineffective as nearby boll weevils can reinfest clean fields. Since 1997, Mississippi has been engaged in a long-term plan to eradicate boll weevils from all fields. In each of the state's four regions, growers voted to be assessed $20-$24 per acre each year for five years to cover the costs of spraying with malathion when certain numbers of boll weevils are trapped in a field.

b. 2002 was the third consecutive year boll weevils did not steal from the state's yields. The first week of trapping revealed weevil-free fields in 95 percent of Mississippi's cotton. Assessments have been cut nearly in half, from $20-$24 per acre to $13 per acre, boll weevil yield losses have been eliminated and growers are no longer spending or losing $50-$60 per acre because of boll weevils.

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

d. State-specific

Key Theme – Animal Production Efficiency

a. Water is the single most important nutrient for poultry production. On-site needs assessment showed that many producers were ignoring availability of water in poultry production. It was not uncommon to see decrease in production of birds that had a water shortage of 0.15 lbs per birds. Working with a commercial company, MSU-ES specialists developed a water stick to easily and rapidly measure flow rates from nipple

drinkers. Producers were taught to use the water stick to ensure that birds were adequate water to drink.

b. Assuming only 15% of the houses instituted the measures, this would create an increase in a grower income of $170 per house per batch (5 batches per year) or a total for Mississippi of approximately $765,000 a year increase in grower payment just to the grower. This does not include the increase in benefits for the company.

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

d. State-specific

Key Theme – Adding Value to New and Old Agricultural Products

a. Most litter from Mississippi broiler farms is applied as a fertilizer on hayfields and pastures. However, this can lead to potential environmental problems from runoff when the soil can no longer contain the excess nutrients applied to it. Research suggests poultry-producing counties will not sustain indefinitely the practice of litter application on poultry farms, and keeping litter in its source county could cost poultry producers an average of $21 to $23 per ton of litter in labor, equipment and land expenditures. Researchers at the Mississippi Agricultural and Forestry Experiment Station used a biophysical modeling program to predict the amount of nutrient, fertilizer, sediment and pesticide runoff expected under various cropping and management systems over a 25-year period.

b. Researchers found that much more phosphorus and nitrogen are applied as litter than can be used by crops, so there is a cost from potential damage to the environment from runoff. Results suggest that the average value of litter in off-site counties is $34.40 to $35.76 per ton of litter. This suggests that a grower could realize a net gain of $13.40 or $12.76 per ton of litter, the difference between value of litter off-site and cost to keep litter, by transporting litter to distant counties.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Animal Production Efficiency

a. In 2001, the beef cattle industry in Mississippi produced a value of $210,163,000 from cattle as reported by the Agricultural Statistics Service. The current beef cattle inventory is 1,116,000 total head with 576,000 beef cows and a 2001 calf crop of 540,000 calves. There are 21,000 beef cattle operations in Mississippi. Recently beef cattle inventories and operations have been declining in number. However, current market forecasts are positive for the immediate future. Mississippi has abundant pasture and hay land resources valued at 4.1 billion dollars. MSU-ES is developing a group of Extension Specialists, Extension Area Agents, Extension County Directors, Natural Resource Conservation Service Soil Conservationists, Veterinarians, and Banking and Finance representatives, to serve as Integrated Resource Management (IRM) teams. The beef producers participate in a comprehensive standardized performance analysis. The IRM teams meet with the beef producers individually to review production and financial performances of the producer's operation. The

IRM team then offers advice and technical support to improve the producer's efficiencies and capabilities. The IRM team involves specialists with emphases in forage and pasture management, soil and water conservation, beef production, reproductive efficiency, herd health, carcass quality and consumer satisfaction, marketing, finance and business management. The desired result is to assist beef producers in developing business plans that work on the farm, meet the producer's goals, improve viability of beef production in Mississippi and enhance the end product.

b. In IRM herds, expenses have been reduced $50/cow/year and additionally, net revenue received increased $50/cow/year. Several IRM herds have demonstrated significant improvement in pregnancy rates and have increased weaning rates.

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

d. State-specific

Key Theme – Small Farm Viability

a. With the economy down and commodity prices depressed, many farmers and landowners are exploring the development of alternative cash crops, including blueberries. Wayne County has an ideal soil type and climate for growing blueberries. MSU-ES agents provided blueberry production programming for interested growers.

b. Authorities project that blueberry acreage in Wayne County will increase 125 acres over the next two years, resulting in a total of 500 acres and having an economic impact of more than $500,000 annually.

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

d. State-specific

Key Theme – Animal Production Efficiency

a. Livestock stress and well-being are complex biological phenomena that affect managed livestock production. MAFES scientists are participating in a multi-state project investigating the effects of environmental stress on production performance in dairy cattle. This regional project draws on the strengths of scientists trained in a variety of disciplines and having expertise in a broad range of livestock species.

b. Scientists have found that novel environmental modifications, such as using fan and sprinkler systems, as well as some management changes, such as pre-milking, can contribute to improved animal welfare and increased production and profitability of the dairy farm. These modifications can increase milk production by up to 20%.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Innovative Farming Techniques

a. Cattle are often grazed on marginal or highly erodible land. With cattle prices low, poor land and small herd sizes make it difficult to make a profit. In a demonstration, MAFES researchers planted corn without tillage on an old fescue pasture. The pasture yielded 100 bushels an acre with much less rainfall than normal, and steers weighing 700 to 900 pounds were turned out to graze the field in mid-July. The study ended in mid-October when all the corn was consumed.

b. The steers grazed on this pasture gained 421 pounds per acre for a gross return of $295, or $.70 per pound. Costs were about $140 an acre, but returns above costs were $155 per acre. Time in feedlots was reduced because the animals gained much of their weight, and therefore value, while the original ownership was retained. Much interest was generated among growers who learned the feasibility of corn grazing, which is possible with no tillage on small, irregular pastures or sloping sites. The system also improves wildlife habitat, and has the potential to qualify for various governmental cost-share programs.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Risk Management

a. The 2002 Farm Bill allowed farmers the opportunity to update their crop bases and payment yields through the USDA Farm Service Agency. Farmers were instructed to seek the assistance of area Extension agents in making this decision. MSU-ES agents assisted about 70 farmers from Holmes, Humphreys, Issaquena, Sharkey and Yazoo counties with their FSA base and yield update decisions. About 560 farm serial numbers were analyzed for farmers in the area.

b. The economic impact of this assistance is estimated to be approximately $10,000 per farm serial number analyzed, for a grand total of $5.6 million saved as compared to other update options.

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

d. State-specific

Key Theme – Ornamental/Green Agriculture

a. An unidentifiable disease on one Mississippi golf club's greens threatened to shut down the club. MSU-ES horticulture specialists visited the greens and identified the problem. They held training sessions for the staff on disease and weed control, scouting and identifying diseases, chemical prevention measures and control methods.

b. The visit by the specialists saved the golf club approximately $100,000 in turf replacement costs. In addition, the training will allow club staff to head off any future problems before they get out of control.

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

d. State-specific

Key Theme – Jobs/Employment

a. The myriad of federal, state and local regulations combined with market pressures to manage and harvest forest resources in a sustainable manner have resulted in an increasingly complex operating environment for the thousands of Mississippi firms engaged in timber harvesting. MSU-ES coordinates the training of loggers, with the cooperation of the Mississippi Logger Education Council and participating forest products companies, in a curriculum that meets the needs of the Mississippi logging community as well as the Sustainable Forestry Initiative goals of American Forest and Paper Association member companies.

b. Many larger manufacturing firms require loggers to complete this program in order to deliver wood as well as get paid for harvesting services. The program allows the 3,000-plus firms employing 25,000 to 30,000 people to continue operating in Mississippi. Since the program began, 7,058 individuals representing 3,099 firms have invested 17,553 workdays in these educational activities.

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

d. State-specific

Key Theme – Invasive Species

a. Recent changes in corn production practices and increased corn acreage have provided the opportunity for the southwestern corn borer caterpillar to once again become more established in Mississippi. Studies have shown the SWCB can decrease yields up to 46 bushels per acre. Detection of the pest is critical to prevent yield losses by proper control measures. Traps baited with SWCB moth pheromone were placed across the state to monitor adult moth flights. As high numbers of moths were reported for an area, MSU-ES specialists inspected fields in the area to determine if control measures should be taken.

b. In the many fields that would not have been treated without the monitoring program, an estimated loss of $3 million was prevented, based on an average loss of 15 bushels per acre at $2.20 per bushel.

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

d. State-specific

Key Theme – Plant Production Efficiency

a. Producers in Sunflower County are faced with fuel cost increases of over 30 percent in the last year. Already small profit margins make this added cost unbearable. MSU-ES agents reintroduced the idea of reduced tillage, emphasizing the positive reviews by specialists of a stale-seedbed approach to all crops. Although this concept is not new, the introduction of herbicide-tolerant crops makes this process much less costly and more efficient than in the past.

b. Approximately half the producers in Sunflower County have begun using some stale-seedbed practices. The saved fuel amounts to over $90,000 in corn alone. In Attala, Holmes and Carroll counties, about 85 percent of producers adopted reduced tillage practices, reducing production costs by about $1.5 million and increasing yields by as much as 10 percent. This practice also saves several tons of soil per acre annually in erosion control.

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

d. State-specific

Key Theme – Agricultural Profitability

a. Mississippi is a heavily wooded state, and much of this forestland is held privately by people with little knowledge of the timber industry. Many do not know the value of their commodity, and accept prices that are much below market value. MSU-ES offers many educational programs aimed at diverse audiences in different parts of the state to educate timber owners on how to manage their land and realize the best profit. In Monroe County, one timber owner was offered $1,200 an acre for his 40 acres of 20-year-old timber. He sought the advice of his local Extension agent before making a commitment.

b. A cruise of his timber showed it to be worth about $3,500 an acre, or $92,000 more than he was offered. He also learned that its value would increase if he waited 10 more years before harvesting the timber. The owner kept his timber, joined the local forestry association, and is more actively managing his investment.

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

d. State-specific

Key Theme – Plant Production Efficiency

a. The SMART program (Soybean Management Applying Research and Technology) has been helping improve Mississippi soybean yields since its start in 1992. MSU-ES helped farmers determine past planting practices, soil textures and past chemical applications. The agents made recommendations of optimal soybean varieties for particular farms. The SMART program is in place on 30 fields in Mississippi.

b. The state average soybean yield is 30 bushels per acre, while the SMART field average yield is 48.8 bushels per acre. The average SMART field yield increase from 2001 to 2002 was 16.8 bushels per acre. Since the program's implementation in 1992, yield has increased in SMART fields by 21.4 bushels per acre.

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

d. State-specific

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 in parentheses after the PPA.

- PPA: Catfish (Food Quality and Safety)
- PPA: Food Safety (Food Safety)

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	Other
Catfish	26	2		9,118	
Food Safety	10			25,408	

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. The pork industry loses millions of dollars each year because of poor quality pork products damaged by mishandling and bruising during transport. Bruising alone results in $48 million lost, while slaughter plants lose $0.40-$1 per pig due to shrinkage caused by mishandling and stress. The Trucker Quality Assurance (TQA) program was developed by the National Pork Board to educate truck drivers on handling, loading and transporting pigs to slaughter. In 2002, two MSU-ES agents were certified to train truckers in the TQA program. Trucker training was conducted in late fall of 2002 and will be held again in 2003.

b. The program will nationally certify participating Mississippi hog transporters and it will improve the quality of pork products as drivers commit to the responsibility of proper handling and transport. This certification is becoming increasingly important to producers and buyers in the industry who want the best quality pork delivered.

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

d. State-specific

Key Theme – Foodborne Illness

a. USDA estimates the costs of food borne disease at $6.9 billion per year. About 76 million cases of food borne disease and 5,200 deaths are reported annually. Poultry products can be one source of food-borne contamination. MAFES researchers are looking at the potential of prebiotics to reduce pathogenic microorganisms in poultry. These substances are health- promoting, non-digestible food ingredients that selectively stimulate the growth or activity of naturally present or introduced bacterial species in the intestine.

b. Studies were conducted to evaluate the effect of a certain type of prebiotic on the microorganisms in broiler feces and intestines. Based on a competitive exclusion principle, the study is using Lactobacilli to reduce or control pathogenic microorganisms in poultry. Results indicate varying microorganism reductions based on the age and sex of the broilers and the type of prebiotic used. Researchers also intend to investigate prebiotics' effect on chicken house odor.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme - Food Safety

a. Food safety issues are complex, and knowledge of the science of food safety varies greatly among food service professionals and consumers. State law for all permitted food service establishments in the state of Mississippi requires food safety certification. Facilities lacking a certified individual are considered to be in critical violation of the law. MSU-ES delivers food safety and quality educational programs through its federal, state and county partnership of professionals. Through its partnership with the Mississippi Department of Health, Extension agents throughout the state have offered *ServSafe Essentials* food safety certification training sessions. Facilities represented in the training have included hospitals, nursing homes, schools, restaurants, childcare facilities, Head Start, Department of Corrections, caterers, and others. The 16-hour certification program addresses critical issues such as the importance of proper personal hygiene, cross contamination, time and temperature abuse, safe preparing and serving of food, hazard analysis critical control points, and cleaning and sanitizing. Successful completion of a national standardized test following the training is required for food service participants to become certified.

b. To date, over 60 certified Extension agents have offered 393 classes, reaching over 8,100 persons. Over 6,000 of the participants have taken and passed the examination to become certified food handlers, with an 86% passing rate in 2002.

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

d. State-specific

Goal 3: A healthy, well-nourished population.

Overview

The following programs are included under goal 3. Each PPA is given with the specific programs in parentheses after the PPA.

- PPA: Human Health (Family Health Needs; Improved Access to Health Care Services; Life Skills and Healthy Habits in Young People; Utilization of Available Medical Care)
- PPA: Human Nutrition (Health and Nutrition)

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	Other
Human Health	4		2	74,146	
Human Nutrition		1	1	315,079	

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. One example of reaching a targeted audience is that of child caregiver and parent workshops in childhood health and safety issues. In 2002, MSU-ES provided a Saturday workshop in 4 Delta counties where 244 individuals received training and/or contact hours. Twenty-six volunteers worked at the event.

b. The participants listed very positive comments and 56% identified at least one behavior they planned to adopt at their work site or home for the benefit of children in their care

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

d. State-specific

Key Theme – Health Care

a. Increased Utilization of Breast Cancer Screening \n\nFor several years, MSU-ES has collaborated with Medicare IQH, American Cancer Society, the Deep South Network and the Mississippi State Department of Health (THINK PINK TASK FORCE) to promote the utilization of free breast cancer screening for low income women, aged 50-64, in rural Mississippi through the Mississippi Breast and Cervical Cancer Project (MBCCP). These free services are not fully utilized and have not been widely promoted by providers. \n\nThe partnership explored multiple strategies to increase utilization of screening services, and chose to try a simple Mother's Day Postcard Campaign in Health Department District III, since all partners had an active presence in these counties. In 2001 and 2002, over 20,000 postcards with the toll-free MBCCP information number were distributed by the partners to individuals who agreed to send them to a woman who needed encouragement to get a mammogram. Extension Service printed the cards and county offices served as a local distribution point.

b. After tracking breast cancer screening utilization for 2 years, a significant, isolated increase in screening service utilization was reported (2002) in District III for the 3 months immediately following the Think Pink Campaign.

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

d. State-specific

Key Theme – Health Care

a. For the past five summers, fifteen high school students, between their junior and senior years, participated in the Rural Medical Scholars Program, a 6-week residential experience at Mississippi State University. By identifying talented, interested high school students we hope to encourage and support career choices by exposing them to academics and experiences relevant to the life of a family medicine physician. The objective is to produce physicians who come from, and choose to remain in, rural Mississippi. During the first week the Scholars participated in a study skills workshop for gifted students. Previous experience indicated the need to help bridge the gap between high school and college level study habits. The first week was also utilized to expose them to issues and experiences relevant to the interests of aspiring physicians. During that time they visited the University of Mississippi Medical School. At the Medical School they met with the head of the admissions committee, talked with a family medicine faculty member, Emergency Room physicians, and medical school students. For the next five weeks, the students took two pre-med courses (Principles of Zoology and College Algebra) and spent one afternoon a week “shadowing” physicians. An intense, rigorous program, it gave the students significant insight into the academic requirements necessary to becoming a physician coupled with a real world look at the day-to-day practice of medicine and some of the issues relevant to the work and personal life of rural physicians.

b. Scholars from the initial session (1998) of the program are now at the point in their education where they can begin to apply for medical school. As of the writing of this report, two Scholars, to our knowledge, have been accepted at University of Mississippi Medical School (UMMC) and two others have made it through the interview stage of application and are awaiting a decision. Of the two that have been accepted, one plans to return to his small Mississippi town and practice family medicine in a county with only two general

practitioners both over the age of 60; he will clearly fill the primary need identified by the program. The second Scholar is a young African-American woman who has been accepted to UMMC's joint M.D./Ph.D. program; she will provide a much-needed increase of minority representation in the medical and research fields as well as serving as a role model to other young minority women.

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

d. State-specific

Key Theme – Human Health

a. Animal models using traditional farm animals are being developed to test biomedical products and procedures. In addition, cell tissue culture techniques can be used to improve biomedical products and devices. MAFES researchers are experimenting with coatings on different implant alloys, such as stainless steel, chrome cobalt and titanium, which can improve implant fixation in bone. New techniques developed in MAFES laboratories can determine how cells will react to the metal surfaces for orthopedic and dental implants.

b. This improvement would serve to reduce health care costs and improve the quality of life of hundreds of thousands of people annually, positively impacting long-term total joint replacement and dental implant stability. Furthermore, progress is being made toward the goal of being able to grow normal cartilage from a patient for re-implantation back in the original patient.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Human Health

a. Children are exposed to a variety of germs each day, and these can thrive if children are not washing their hands. It is especially important in a school or day care that children wash their hands after using the bathroom, but this is often not an established habit. The MSU-ES conducted a hand-washing experiment for youth at one daycare center, demonstrating the importance of germ control and the spread of diseases. An orange lotion, representing germs, was rubbed on their hands, and students were shown how washing with soap, very warm water, and friction eliminated the lotion. At a primary school, students took a pre-test concerning germs, heard a presentation about fighting bacteria by washing hands, and then retook the test.

b. From the "Glow Germ" experiment, the youth learned the importance of washing with very warm water, soap and friction in order to kill germs and prevent the spread of illness. This will decrease germs in school environments and will help establish a healthy pattern of hand washing for these youth. In the primary school, test scores indicated a 33 percent increase in understanding that hand washing helps eliminate germs, and the class has improved in washing their hands since the presentation.

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

d. State-specific

Key Theme – Human Nutrition

a. Obesity increases the risk of heart disease, cancer and diabetes, and Mississippi ranks as one of the most obese states in the United States. People often have difficulty losing weight because of unhealthy weight-loss programs that do not encourage long-term behavioral changes. MSU-ES agents annually conduct several "Weight Off Wisely" programs, which focus on lifestyle changes that include developing healthy eating habits and increasing physical activity.

b. In Webster County, participants lost a total of 126.25 pounds and 124.5 inches. DeSoto County participants lost an average of 7.1 pounds and 7.2 inches. In Itawamba County, 57 participants in three classes lost approximately 440 pounds. However, the more important benefits were decreased blood pressure and cholesterol levels, and a decreased risk of heart disease, cancer and diabetes.

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

d. State-specific

Key Theme – Human Health

a. Chronic diseases account for more than 70 percent of all deaths in Mississippi and 60 percent of all medical expenses. An MSU-ES family and consumer education specialist offered a course on saving money by having a healthier lifestyle. Emphasis was placed on items like cigarettes, soft drinks, candy, chips and fast food, all of which are both financially draining and physically unhealthy.

b. One participant has been smoke-free for three months and is following nutritional advice received during the program. In one year, she will save about $1,000 by not smoking, $144 by reducing the number of soft drinks she consumes and $500 by reducing by half the number of fast-food meals she eats. Perhaps more importantly, she has a good chance of living a longer, healthier life.

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

d. State-specific

Key Theme – Human Nutrition

a. Many young people do not eat or drink what the Food Guide Pyramid recommends. They consume large amounts of sugar and cola drinks while neglecting healthy drinks like milk. In Attala County, MSU-ES agents provided a series of five classes for children in a housing project over the summer. They could not eat school lunches and their parents were at work, so they were not receiving the proper nutrition each day. In a George County Food Service class, MSU-ES agents conducted a nutrition program.

b. The Attala County youth increased their milk consumption from less than one glass per day to drinking three or more glasses per day, and they reduced soft drink consumption to one or fewer per day. In George County, one student decreased her soft drink consumption from four soft drinks per day to one soft drink a day plus three bottles of water. The Food Service teacher reports that instead of bringing soft drinks to class each day, many of the students now bring bottled water.

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

d. State-specific

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 in parentheses after the PPA.

- PPA: Cotton (Insect Management - IPM)
- PPA: Soybeans (Integrated Pest Management)
- PPA: Swine (Waste/Odor Management)
- PPA: Wildlife and Fisheries (Ecology and Management of Sustainable Resources; Ecosystem Management and Restoration)

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	Other
Cotton	43	3	1	93,107	
Soybeans	25	2	1	62,377	
Swine	2			1,989	
Wildlife and Fisheries	1		1	68,682	

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 – Land Use

a. Continuing development in coastal areas of Mississippi increases possible negative impacts on wetlands, water quality, and public health. MAFES and MSU-ES personnel are working together to define the extent of developmental pressures on coastal environments and resources and evaluate appropriate methods (best management practices) to correct or reduce impacts and improve conditions. Both constructed and natural wetlands and filtration systems regimes are being evaluated.

b. Results from hydroponic and sawdust filter trials will provide information that may prove useful to the management of effluents from both aquaculture and horticulture operations. Results from monitoring of pastureland watersheds may prove useful to the management of manure runoff and pastureland management, as well as provide data to support water quality modeling efforts.

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

d. Integrated Research and Extension

Key Theme – Agricultural Waste Management

a. Dead bird disposal is an ongoing problem for poultry producers. Environmental concerns leave them with limited options for bird disposal, all of which have disadvantages. MAFES researchers developed the Compost King, a combination compost machine and spreader. MSU-ES agents in Leake County held an educational demonstration of a new method of disposing of chickens using portable composting equipment.

b. Some 30 poultry producers learned how to utilize virtually maintenance-free equipment that is much less labor intensive, more environmentally friendly and considerably less expensive than incineration. Other advantages of the Compost King include producers only handling birds once as compared to several times with other methods, and having the ability to spread composted material directly from the unit to the fields.

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

d. Integrated Research and Extension

Key Theme – Natural Resources Management

a. Studies show conservation buffers help control soil erosion and improve soil and water quality by removing sediment, fertilizers, pesticides and other potential contaminants from runoff. There is little information, however, about their impact on wildlife, especially regarding reproductive performance of birds in field borders. MAFES scientists in the Department of Wildlife and Fisheries have established 30- to 60-foot field borders planted to native warm-season grasses and legumes on selected fields of participating private farms.

b. These projects demonstrate that native, herbaceous field borders increase local abundance of bobwhite, avian diversity during summer and winter, and abundance of select grassland songbirds, many of which are in regional decline and of conservation concern. In only three years, fall bobwhite populations have increased from less than one bird per 13 acres to nearly one bird per two acres.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Natural Resource Management

a. The balancing act of training for national defense while protecting wildlife resources at military bases has been a concern of the Department of Defense for more than 12 years. MAFES researchers in the Department of Wildlife and Fisheries have assisted in preparing long-range management plans to address ecosystem management on military lands. The challenge has been to effectively train for national defense while managing forest resources, conserving fish, wildlife, soil and water resources, and protecting threatened and endangered species.

b. This management promotes wildlife and conservation, and demonstrates the effective use of natural resources by the Department of Defense, promoting a duality of both people and wildlife able to use the lands in the full capacity that is needed. As a result, many state and federally protected plants and animals have more suitable habitat.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Recycling

a. Pesticides often are sold to producers in disposable, non-returnable plastic containers. Taking these containers to landfills is both expensive for the producer and hazardous to the environment. MSU-ES personnel in many Mississippi counties hold pesticide application training programs annually, during which producers are encouraged to rinse and recycle pesticide containers. Designated collection sites have been established in areas that are convenient to producers.

b. In 2001 in Sunflower County, 225 producers recycled more than 90,600 pounds of rinsed plastic pesticide containers, up from 67,000 pounds in 2000. This is a direct savings of more than $100,000 to the producers of Sunflower County who previously would have paid landfills to accept the containers. MSU-ES agents in Adams County partnered with several organizations to host a pesticide disposal day, held at a local farmer's headquarters. A total of 48,000 pounds of waste pesticides were collected, saving producers approximately $52,800 in disposal costs.

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

d. State-specific

Key Theme – Biological Control

a. Some major cotton pests have become resistant to certain pesticides. To delay resistance, farmers are required to leave a percentage of their acreage as a refuge to preserve susceptible insects. This process reduces yield and profits. Scientists at MAFES found that the Paulownia tree is a refuge for caterpillar larvae. Research indicates that 2-7 times more larvae can be produced on this tree than on an acre of cotton.

b. Growing Paulownia trees near cotton fields could allow more production land to be planted with Bt cotton,

which could reduce the overall amount of pesticides used in cotton production. Bt cotton could require 2-4 fewer insecticide applications per acre per year, which could translate to $30-$60 per acre savings for producers. Mississippi produces more than 1 million acres of cotton each year, 80 percent of which is Bt cotton. If the remaining 20 percent were changed to Bt cotton, this could result in an annual savings of $6-$12 million in reduced pesticide application.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Soil Erosion

a. Before 1994, farmers in several Mississippi counties were not using any form of reduced tillage on their fields, and by 2001, just 40 percent had adopted the practice. Already small profit margins and fuel costs rising by more than 30 percent are making reduced tillage an even more attractive option. Years of MSU-ES agent training, demonstrations, individual consultations and meetings educated area producers about the techniques and emphasized the advantages. The introduction of herbicide-tolerant crops has helped make the reduced tillage option much less costly and more efficient than previously.

b. In the 2002 crop year, the adoption of reduced tillage practices more than doubled to 85 percent in three Mississippi counties. Farmers there reduced production costs by about $1.5 million while maintaining yields or seeing increases of up to 10 percent. In Sunflower County, producers saved more than $90,000 in fuel costs alone. In all areas where less tillage is performed, farmers are saving several tons of soil per acre that would otherwise be lost to erosion.

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

d. State-specific

Key Theme – Land Use

a. Mississippi has 24,000 beef operations with about 1.1 million cattle. The cost of establishing ryegrass pastures for cattle each year is estimated at $170 per hectare, and fertilizer application is 70 percent of this cost. MAFES scientists conducted a grazing study to assess the potential of tall fescue, a perennial cool season grass, as an alternative to annual ryegrass for use on cool season grazed pastures. They also evaluated utilization of broiler litter versus commercial Nitrogen fertilizer.

b. Average herbage mass, a measure of the amount of forage available for grazing on a pasture, was greater for tall fescue than ryegrass. The use of a perennial cool season forage like tall fescue will eliminate the cost of yearly ryegrass establishment. Pastures where broiler litter was applied pre-planting had 20 to 45 percent greater herbage mass compared to all other treatments. Broiler litter is free for the taking, requiring only transportation costs, it only has to be applied once per growing season, and it contains other major plant nutrients, so researchers estimate it can save producers 50-70 percent more than using commercial fertilizers. Use of broiler litter could alleviate fertilizer costs while providing an environmentally safe way to dispose of

poultry industry waste.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Agricultural Waste Management

a. Odor control is a major concern of swine producers. The Swine Odor Reduction Bioreactor System (SORBS) was installed at a MAFES commercial swine production facility. SORBS, an experimental unit developed by scientists in the Agricultural and Biological Engineering Department, uses naturally occurring microorganisms to process swine waste.

b. Testing showed SORBS produced a discernable reduction in wastewater odor in a lab setting. At the farm site, SORBS should reduce odor while producing a value-added fertilizer or soil-amendment that can be exported from the farm. Exporting nutrients off the farm as fertilizer could increases producers' ability to meet nutrient management goals established by the EPA for animal feeding operations.

c. Hatch funds (amounts and FTE not available)

d. State-specific

Key Theme – Pesticide Application

a. Weeds are a problem in row crops. Herbicide applications can be effective, but they can be costly and potentially harmful to the environment. MAFES scientists conducted research to compare weed scouting methods for site-specific weed management. Researchers used perimeter tracing and population sampling at various scales, and remote sensing.

b. Research showed that site-specific weed management could reduce herbicide applications. Perimeter tracing showed general weed distribution and areas of high weed density. Gridded sampling was effective but required too much time and effort to be economically feasible. Remote sensing was also effective in weed detection, classifying weed species accurately up to 99 percent of the time.

c. Hatch funds (amounts and FTE not available)

d. State-specific

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 in parentheses after the PPA.

- PPA: Agribusiness (Agribusiness Development)
- PPA: Child/Youth/Families at Risk--CYFAR (Reducing At-Risk Behaviors; Nurturing Families)
- PPA: Consumer Education (Clothing; Housing; Kenaf in Textiles/Textile Products)
- PPA: Economic/Comm Development (Community Leadership Development; Diversifying Rural Economies; Entrepreneurial & Business Development; Strategic Planning by Local Communities; Local Government Officials Education)
- PPA: Financial Management (Family Financial Management; Farm Business Financial Management)
- PPA: Food and Food Products (Business Feasibility; Specialty Foods Business Development)
- PPA: Forest Products (Forest Products)
- PPA: Leadership Development (Volunteers)
- PPA: Safety (AgrAbility; Farm Safety; Youth Safety)
- PPA: Wildlife & Fisheries (Youth Development; Socio-Economic Investigations of Fish and Wildlife)
- PPA: Youth Development (4-H)
- PPA: Youth Livestock (4-H)

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	Other
Agribusiness	10	2		71,073	
Children, Youth and Families at Risk			1	244,891	
Consumer Education	3	1		50,674	
Economic/ Community Development	9	1		115,652	
Financial Management	2		2	52,022	
Food and Food Products	38	1		5,637	

Forest Products				4,482	
Safety			1	55,489	
Wildlife and Fisheries	1		1	68,682	
Youth Development			4	382,309	
Youth Livestock			1	137,317	

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 – Children, Youth, and Families at Risk

a. Social service agencies that serve low-income families rely on MSU-ES to provide programs in financial management. In the past year, MSU-ES provided this programming for adults participating in the following social programs: Welfare to Work and TANF, Rapid Response programs, Headstart parenting classes, GED classes, local job fairs, family matters conferences, small and home-based business groups, newlywed couples seeking a good financial start, and many others.

b. Follow-up surveys showed that program participants indicated changes in financial management practices including better budgeting and recordkeeping skills, a more up-to-date estate plan, written small business plans, reduction of debt, and better saving and bill payment habits. In addition, an Extension representative served as chairman of the board for the Mississippi Comprehensive Health Insurance Risk Pool Association, which provides health insurance to approximately 3,000 otherwise uninsurable Mississippi residents.

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

d. State-specific

Key Theme - Family Resource Management

a. An MSU-ES specialist developed the national educational model for Extension credit union partnerships resulting in personal finance education for over 165,000 students. Financial management students learned basic money management, life skills, the value of education in their chosen career, employment/work skills, and basic financial planning for life.

b. Pre-test/post-test results show as high as an 85% improvement in financial management knowledge following the completion of Extension financial management classes.

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

d. State-specific

Key Theme – Leadership Training and Development

a. The Mississippi Homemaker Volunteers are a group of 3,228 Mississippians who are involved in a variety of activities that benefit their communities, their counties and their state. Persons who are over age 60 carry out many of the activities. Their age and sometimes their limited incomes do not limit their willingness to help others. On the national and state level they donate their time and money to Mississippi Children's Hospital, Ronald McDonald House, Habitat for Humanity, St Jude's Ranch for Children, Women's Abuse Centers, and countless other worthwhile groups.

b. The Mississippi Homemaker Volunteers donated 282,239 hours to worthy causes at a value of $4,206,112.63. The MHV members donated over 1,800 teddy bears to the Mississippi Highway Patrol to give to children involved in vehicle accidents in order to help calm them after this traumatic experience.

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

d. State-specific

Key Theme – Youth Development/4-H

a. The 4-H program has had an enormous impact in its 100-year history in Mississippi. As the Centennial celebration took place in 2002, the state 4-H wanted to develop new initiatives and set goals for the state program, while also accepting the challenge to join the National 4-H Centennial Conversation. County and State 4-H staff joined with MSU-ES staff to commit time and support to the planning and institution of state and national conversation. They formed a series of committees to plan ways to strengthen and grow 4-H in Mississippi.

b. Local conversations culminated in 35 county conversations with over 1,000 participants pledging over 1,800 hours of community service. In early March, 10 Mississippi youth joined more than 1,600 others for the National Conversation. Recommendations from the Conversation were reported to President Bush and Congress and will impact programs and policy.

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

d. State-specific

Key Theme – Children, Youth and Families at Risk

a. Children of single parents without a positive male role model often experience behavioral, academic and

social problems. MSU-ES selected students from Quitman County Middle School to participate in a mentoring program organized by 4-H and a local church group. The 25 children were assigned to a group of 4-H male volunteer mentors called Men Making A Difference (MMAD). The children and their male mentors meet twice monthly for a scheduled training session and an educational outing.

b. Of the original 25 participants, 15 consistently attended the MMAD meetings, receiving academic tutoring in addition to having a male presence in their lives. Originally supported by a partnership between 4-H and a local church, the program was supported for a second year with a $12,625 grant from Delta Health Partners. This grant allowed for the purchase of three new computers to help tutor students and their parents, whose employability skills were improved with computer training.

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

d. State-specific

Key Theme – Workforce Preparation - Youth

a. Youth typically have very little idea of the financial requirements of running a household and getting ahead in life. MSU-ES agents worked with the local high school in Marion County to create the "Real World," a hands-on, life simulation that allows students to experience their futures. Students researched their chosen career, learned educational requirements, and entered the "Real World" with an entry-level income and adult responsibilities. Taxes were withheld and they had to buy a car and pay for housing, utilities, childcare, insurance, groceries and clothing. They could make discretionary purchases with the remaining money.

b. Before the experience, most students had no idea what it takes to run a household for a month. Students learned the importance of getting an education and establishing themselves in a career before starting a family. The program was expanded to all the junior classes in the county this year.

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

d. State-specific

Key Theme – Promoting Business Programs

a. Many small-business entrepreneurs have excellent products and ideas for sale, but they face the obstacles of limited funds and limited growth. Only 20 percent of small businesses survive longer than 10 years. MSU-ES conducted a study on e-commerce and entrepreneurship, selecting C. J.'s Place, a hair-bow business in Holly Springs, MS, as a focus project. They assisted the owner in expanding her business to e-commerce by constructing a website where her bows can be viewed and purchased.

b. Within the first 60 days of operation, the website, *www.cjsbows.com*, generated more than $2,000 in revenue, and her shop experienced a 40 percent increase in business overall. Clientele expanded to include customers from all over the nation, and even Japan.

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

d. State-specific

Key Theme – Children, Youth, and Families at Risk

a. Socially, emotionally and behaviorally challenged people require special opportunities to learn to set goals, work hard at accomplishing those goals and analyze their successes. They need to practice building relationships and communicating in a non-threatening environment to be equipped to deal with the demands of everyday life. MSU's Horse Park hosted FOCUS, a one-week day camp designed for girls age 12 to 17 for "Finding Out about Communicating, Understanding and Succeeding." Eight girls from a group home in spent a week with horses as part of a therapy program provided by MSU-ES.

b. Therapeutic riding taught the girls about relationships and communication. By late in the week, the girls who are usually unruly at home had learned to be quiet and calm around the horses. They received positive reinforcement and attention, learning cooperation and building confidence, trust, self-respect and self-esteem.

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

d. State-specific Integrated Research and Extension

Key Theme – Child Care

a. Children in child-care establishments need an environment that is nurturing and educationally supportive. Many children attend these facilities each day in Mississippi, so those who provide childcare can benefit from instruction in quality care. MSU-ES offers the Nurturing Homes Initiative (NHI), which gives supportive educational training and materials to unlicensed home child-care providers. Participants received home-learning packets with simple lesson plans including developmentally appropriate teaching methods on various topics. Lessons included health and safety, nutrition, language development, literacy establishment, various learning activities, money management and administration.

b. Last year's pre- and post-assessment scores revealed significant improvement in the quality of child care being provided at the participating businesses. During the second year of the NHI, 86 percent of the 90 participating providers improved at least one rating point. One provider received her Child Development Associates Directors License, and two providers have opened licensed child care centers.

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

d. State-specific

Key Theme – Youth Development/4-H

a. The Make-A-Wish program no longer grants wishes to seriously ill children who want to experience

hunting or fishing adventures. MSU-ES, through the 4-H Field and Stream Program, provides educational materials and expertise to help support the Mississippi Wildlife Federation's Catch-A-Dream program. This program allows children with life-threatening illnesses the chance to experience an outdoor adventure.

b. Children across the United States now have the opportunity to see their outdoor dreams become reality when they hunt trophy elk in Utah, catch Rainbow trout in Arkansas or participate in various other outdoor activities across the country.

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

d. State-specific

Key Theme – Youth Development/4-H

a. Many youth lack funds to attend college after graduating from high school. MSU-ES 4-H agents in Jasper County offer the 4-H livestock program and sale, which offers an opportunity for youth to earn and save funds from the sale of their animals for use toward college expenses.

b. A total of 60 youth earned $89,948, for an average income per youth of $1,500.

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

d. State-specific Integrated Research and Extension

Key Theme – Consumer Management

a. America's young adults lack the basic personal finance knowledge needed to make the most of their income now and in the future. A recent survey showed that less than 11 percent of students learn money management skills in school. MSU-ES agents in Kemper County implemented a "Mall Mania" program for youth ages 8-18 years at Bonita Lakes Mall in Meridian. Participants used imaginary money to comparison "shop."

b. From a six-county area, 31 youth learned the skills necessary to become smart shoppers, which has the potential to reduce bad credit ratings and bankruptcy in the future for the participants.

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

d. State-specific Integrated Research and 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.

Agriculture and Forestry Summit

MSU's Division of Agriculture, Forestry, and Veterinary Medicine conducts the Agriculture and Forestry Summit annually. The summit is a statewide planning process involving a diverse group of stakeholders. Results of the summit are used to develop research and extension priorities.

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.

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 <u>all</u> 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 2,402,682 total contacts made by Extension, 754,971 (31.42%) were made to African-American, Native-American, or other under-served populations. This percentage is only slightly lower than 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, make selection of proposals for funding and allocate 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. The 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 formulates plans of action and helps to facilitate team building to for 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. 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.

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Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)

Institution Mississippi State University
State Mississippi

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

Title of Planned Program/Activity	Actual Expenditures FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Southern Extension & Research Activities	67,195.54	59,363.43	29,906.67		
Money and You	5,873.56	5,732.24	15,285.16		
Mid-South Fair	13,221.89	26,909.09	12,415.12		
Southern Reg. Middle Managers Conference	5,973.00	3,915.97	2,234.15		
Southern Reg. Volunteer Leaders Forum	115,672.75	26,378.86	23,483.63		
Program Leadership Conference	40,495.01	41,026.67	40,346.28		
National 4-H Congress	26,725.25	19,398.29	26,163.47		
Tri-State Ministers Meeting	6,509.05	4,408.83	3,875.60		
MS-LA Family Matters Conference	51,604.09	10,849.15	14,796.88		
Franklinton Beef and Dairy Project	51,545.48	44,946.36	56,240.95		
Cotman Project	12,959.98	12,553.79	10,995.03		
Tri-State Soybean Forum	31,871.53	30,357.34	22,341.97		
Delta States Farm Management Group	1,181.62	10,951.45	7,212.01		
Beltwide Cotton Conference	9,426.63	2,737.86	2,885.82		
Southern Reg. Extension Animal Scientists	6,676.73	7,059.07	2,305.25		
Southern Forage & Pasture Improve. Conf.	4,925.84	0.00	1,213.80		
National Ext. Livestock Specialists Conf.	10,555.36	0.00	0.00		
Commercial Vegetable Recommendations	0.00	0.00	1,783.75		
Greenhouse Tomato Short Course	0.00	0.00	3,576.44		
National Catfish Database Committee	0.00	0.00	4,905.91		
National Extension Technology Conference	0.00	0.00	2,238.50		

S. Reg. Comm. on Public Affairs/Farm Mgt.	0.00	0.00	7,568.69		
Southern Community Development Institute	0.00	0.00	1,741.40		
Tri-State Fruit & Vegetable Growers	0.00	0.00	7,071.11		
MS-LA Blueberry Growers Conference	0.00	0.00	3,234.52		
Total	**462,413.40**	**306,588.40**	**303,822.11**		

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.

MS/LA Family Matters Conference - This conference focuses on critical issues facing families in today's society. Designed for three tracks—professional, adult, and youth—the conference provides workshops, exhibits, and keynote speakers. The conference attracts more than 300 participants annually

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 recommendation 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 Catfish Database Committee – Mississippi State University serves as the Lead Institution for the project, and will work cooperatively with other institutions in product development. National Catfish

Information Database (NCID) will be developed through nationwide cooperation among the colleges and universities in the land grant system, and will direct the best expertise in the nation toward the knowledge, educational and decision-support needs of the farm-raised catfish industry. NCID will develop a useful product for catfish farmers, resulting in a catfish industry that is better equipped to make informed decisions. Scientists from all appropriate catfish subject matter disciplines will be enlisted to cooperate in addressing these needs in a uniform and useable format. Through this public/private-sector partnership, the best knowledge-based, educational, and decision support tools will be provided to the nation's catfish producers. Discovery information and technology transfer will also be enhanced from the multi-million dollar public and private sector research investment to directly benefit the nation's leading aquaculture sector.

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.

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.

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

Title of Planned Program/Activity	Actual Expenditures FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Agribusiness	*	*	*		
Beef and Forage	278,963	371,445	108,025		
Catfish	*	*	*		
Corn	23,980	50,034	46,309		
Cotton	53,094	60,223	215,998		
Dairy	*	*	143,976		
Food and Food Products	425,342	307,201	277,235		
Forest Products	*	*	*		
Forestry	*	*	*		
Horticulture	170,218	133,758	117,238		
Poultry and Products	*	12,211	*		
Rice	10,815	16,801	47,637		
Safety	*	*	*		
Soybeans	1,073	9,877	4,601		
Swine	*	*	*		
Wildlife and Fisheries	*	*	*		
* Integrated activity exists using non-federal funding sources.					
Total	**963,485**	**961,550**	**961,019**		

Form CSREES-REPT (2/00)

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

Title of Planned Program/Activity	Actual Expenditures FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Agribusiness	387,174.60	437,985.80	386,968.78		
Beef and Forage	288,624.99	232,441.97	394,553.32		
Catfish	71,862.72	100,967.05	77,210.11		
Corn	73,613.51	62,430.72	69,365.54		
Cotton	225,968.90	235,905.15	246,342.30		
Dairy	52,168.17	28,900.17	50,685.18		
Food and Food Products	37,140.07	24,296.79	24,951.99		
Forest Products	36,467.68	41,322.87	23,344.24		
Forestry	433,066.92	396,201.79	407,270.95		
Horticulture	591,804.37	531,946.22	685,789.67		
Poultry and Products	53,976.15	48,522.70	36,877.01		
Rice	20,894.55	42,943.41	50,844.19		
Safety	45,512.75	63,989.25	122,336.87		
Soybeans	173,587.21	144,518.95	146,201.11		
Swine	49,417.67	26,482.71	16,514.06		
Wildlife and Fisheries	109,008.42	86,469.30	168,966.68		
Total	**2,650,288.10**	**2,505,324.87**	**2,908,222.00**		

Form CSREES-REPT (2/00)