

2019 Annual Report of Accomplishments and Results

Mississippi
Alcorn State University
Mississippi State University

I. Report Overview

The NIFA reviewer will refer to the executive summary submitted in your Plan of Work. Use this space to provide updates to your state or institutions as needed.

1. Executive Summary (Optional)
<p>This report of accomplishments is reporting against the 2017 Alcorn State University and Mississippi State University Combined Research and Extension Plan of Work. Entities include the Mississippi State University Extension Service (MSU Extension), the Mississippi Agricultural and Forestry Experiment Station (MAFES), and the Alcorn State University (ASU) School of Agriculture, Research, Extension, and Applied Sciences (AREAS).</p> <p>As identified by community partnerships, environmental scans, researchers, stakeholder input, and Extension staff, the six integrated critical issue areas to be addressed by MSU and ASU are:</p> <ol style="list-style-type: none">1. Animal Systems;2. Plant Systems;3. Natural Resources;4. Community Resource and Economic Development;5. 4-H and Youth Development; and6. Family and Consumer Science. <p>[No Updates]</p>

II. Merit and Scientific Peer Review Processes

The NIFA reviewer will refer to your Plan of Work. Use this space to provide updates as needed or activities that you would like to bring to NIFA’s attention.

Process	Updates
1. The <u>Merit Review Process</u>	The merit review process was followed as planned. [No Updates]
2. The <u>Scientific Peer Review Process</u>	The scientific peer review process was followed as planned. [No Updates]

III. Stakeholder Input

The NIFA reviewer will refer to your Plan of Work. Use this space to provide updates as needed or activities that you would like to bring to NIFA’s attention.

Stakeholder Input Aspects	Updates
1. Actions taken to seek stakeholder input that encouraged their participation with a brief explanation.	The actions taken to seek stakeholder input were followed as planned. [No Updates]
2. Methods to identify individuals and groups and brief explanation.	The methods to identify stakeholders were used as planned. [No Updates]
3. Methods for collecting stakeholder input and brief explanation.	The methods for collecting stakeholder input were used as planned. [No Updates]
4. A Statement of how the input will be considered and brief explanation of what you learned from your stakeholders.	The input was considered as planned. [No Updates]

IV. Planned Program Table of Contents

No.	Program Name in order of appearance
1.	Animal Systems
2.	Plant Systems
3.	Natural Resources
4.	Community Resource and Economic Development
5.	4-H and Positive Youth Development
6.	Family and Consumer Sciences

V. Planned Program Activities and Accomplishments

Please provide information for activities that represent the best work of your institution(s). See Section V of the Guidance for information on what to include in the qualitative outcomes or impact statements. Add additional rows to convey additional accomplishments. You may expand each row as needed.

No.	Title or Activity Description	Outcome/Impact Statement	Planned Program Name/No.
1.	<p>Outcome 1 Clientele increase knowledge about recommended agricultural practices or behaviors. (MSU)</p> <p>Activity Description a. Workshop</p>	<p>Issue Many backyard poultry keepers across Mississippi are unaware of the importance of biosecurity in protecting their flocks and the commercial poultry industry in Mississippi. Likewise, they are unfamiliar with proper biosecurity practices that keep chickens safe. Successful adoption of proper biosecurity practices can protect backyard flocks and Mississippi’s commercial industry. However, there are limited opportunities for backyard poultry keepers to learn the proper biosecurity procedures.</p> <p>Target Audience Backyard poultry keepers</p> <p>Response A biosecurity workshop program was developed by the MSU Extension Service to educate backyard poultry keepers on the importance of biosecurity in keeping the state’s backyard flocks and its commercial poultry industry safe. The program was first offered in Hattiesburg in collaboration with the MSU Coastal Research and Extension Center during August 2019. Since then, the program has been offered in Verona in collaboration with the North MS Research and Extension Center, and in individual county offices based on the needs of individual county agents and their clientele.</p>	1. Animal Systems

		<p>Results Based on a survey conducted after the workshop, participants became aware of how to spot disease symptoms in their flocks, the ability of the diagnostic lab to conduct necropsies and determine cause of death in birds, biosecurity practices to follow to protect their flocks, how easily diseases can be transported from one location to another, and who to contact for assistance with sick birds. Participants now understand the main paths of disease transmission and risky practices that can threaten their flocks. They also understand how to search the Extension Service website for poultry-related articles and how to contact poultry Extension specialists on campus if they need assistance. Participants also now know how to report sick birds and are aware of the role of the Mississippi Board of Animal Health, the Mississippi Veterinary Research and Diagnostic Lab, the Mississippi State University Poultry Science Department, and their local county agent play in keeping all the chickens in Mississippi (both backyard and commercial birds) safe.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>2.</p>	<p>Outcome 2 Clientele implement recommended agricultural practices or behaviors. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Update to premium book b. Extension Agent In-service Training Workshop 	<p>Issue The Dixie National Junior Round-Up is the largest market animal show in Mississippi. With the addition of breeding livestock, over 2,300 animals are exhibited by over 1,000 youth. Being able to communicate all rule changes and updates to 4-H/FFA youth and their families is paramount when putting on an event of this prestige with so many participants. Challenges have arisen in previous shows to make it necessary to address them with a common message well in advance of the shows and educational contests.</p> <p>Target Audience</p>	<p>1. Animal Systems</p>

		<p>MSU Extension Agents and the 4-H and FFA youth and families with whom they work</p> <p>Response In addition to supplying rule changes in the 2019 Dixie National Junior Round-Up Premium Book, a supplement was created in addition to an in-service training for Extension Agents to better educate them of new and revised rules. It is important that rules are interpreted and enforced the same way, so this allows for the sessions to be presented and recorded so that a common message is conveyed.</p> <p>Results As a result of the 2019 Dixie National Junior Round-Up training session, thirteen MSU Extension Agents actively participated in the in-service session to communicate critical changes to their clientele. When surveyed about the training, Agents responded (on a 5-point scale) that they had a better understanding (4.78) of the rules and regulations that govern the Dixie National Junior Round-Up. During the shows and educational contests, youth participants were more aware of how the shows took place and fewer unexpected incidents occurred, thereby allowing youth to fully exhibit their project animals at this prestigious event.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>3.</p>	<p>Outcome 3 Clientele report enhanced agricultural productivity and/or profitability. (MSU)</p> <p>Activity Description a. Workshop with hands-on experience</p>	<p>Issue Many cattle producers leave attainable returns unrealized by lack of sufficient genetic improvement in their herds. Artificial insemination is a proven means of rapidly improving the genetics of a cattle herd but requires specialized training to learn how to implement this technology. Successful adoption of artificial insemination requires intensive management and specialized training in artificial insemination technique. There are limited training opportunities to learn artificial insemination management and technique in the United States.</p>	<p>1. Animal Systems</p>

		<p>Target Audience Beef and dairy cattle breeders</p> <p>Response MSU Extension’s Cattle Artificial Insemination School was developed to provide a cost-efficient program to educate producers on reproductive management, familiarize producers with artificial insemination tools, and provide hands-on artificial insemination experience. The curriculum is updated at least twice annually to provide the most current information to participants.</p> <p>Results The Cattle Artificial Insemination School has gained national attention attracting participants from 20 states and one foreign country to date. Participant feedback indicates notable artificial insemination adoption as a result of this school. Each year the program’s annual economic impact grows by approximately \$75,000 as another 60 Mississippi cattle breeders implement artificial insemination as a result this program. Additional monetary benefits of the program are also realized from improved implementation of nutritional, health, and reproductive best management practices emphasized through this school.</p> <p>External Factors No external factors affected this outcome.</p>	
4.	<p>Outcome 4 Number of program participants that improve livestock production efficiency through best management practices. (ASU)</p> <p>Activity Description</p>	<p>Issue The United States Department of Agriculture (<i>USDA</i>) reported that over 1 million pounds of meat goats are imported annually from Australia into the United States in the form of carcasses and processed meat (<i>USDA, 2019</i>). The demand for goat meat has increased due to the recent rise in ethnic populations’ consumption of goat meat as a part of their traditional diets.</p> <p>Target Audience</p>	1. Animal Systems

	<p>Workshop were conducted on</p> <ul style="list-style-type: none"> a. Alternative Livestock Production b. Basics of Meat Goat Production c. Best Management Practices d. "Goat Field Day" 	<p>Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University Extension Program's Specialist and Educators conducted 37 workshops and a goat field day. Topics consisted of Alternative Livestock Production and Basics of Meat Goat Production.</p> <p>Results A total of 3,697 participants attended the 23 workshops implemented by ASUEP. The results from a questionnaire administered to participants indicated the following: production efficiency increased by 43% from 5% to greater than 20%; herd health decreased by 43% (based on animal illness and deaths); the annual mortality decreased from 5% to greater than 20%; herd profitability increased by 18% (participants reported an increase between \$5,000-\$10,000); and 4% of participants indicated an profitability increase between \$11,000-30,000.</p> <p>External Factors No external factors affected the outcome of workshops results indicated above.</p>	
<p>5.</p>	<p>Outcome 5 Number of producers that improve pasture grass fed to livestock. (ASU)</p>	<p>Not reporting on this outcome</p>	<p>1. Animal Systems</p>
<p>6.</p>	<p>Outcome 6 Number of farmers that utilize artificial insemination and/or embryo transfer to decrease the need to purchase quality male animals and improve herd genetics. (ASU)</p>	<p>Issue Herd genetics directly influence profitability within the livestock industry. Artificial insemination (AI) is the best approach to rapidly improve herd genetics. Improved herds are linked to increased profits within industry. AI programs at Alcorn State University inform farmers about advantages of purchasing semen, the economic impact of improved cattle genetics, and the process to perform AI.</p>	<p>1. Animal Systems</p>

	<p>Activity Description</p> <p>Workshops were conducted on</p> <ul style="list-style-type: none"> a. Advantages of AI b. Estrus Synchronization c. Semen Selection Methods d. Handling and Thawing Frozen Semen e. Farm Record Keeping 	<p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University's Extension Program Specialist and Educators implemented seven AI workshops. Workshop topics consisted of Advantages of AI, Estrus Synchronization, Semen Selection Methods, Handling and Thawing Frozen Semen, and Farm Record Keeping.</p> <p>Results A total of 148 participants attended the workshops implemented by ASUEP. A survey questionnaire was administered and the results from participants' responses indicated the following: 52% noted increased breed selection pressure or changed the breed genetic, 27% begun or modified performance records, and 34% modified within-herd selection/culling procedures. Additionally, results showed a 50% increase in participants' record keeping knowledge and skills.</p> <p>External Factors No external factors affected the outcome results of the above-mentioned workshops.</p>	
<p>7.</p>	<p>Outcome 7</p> <p>Number of farmers that adopt pasture or alternative livestock systems as an alternative enterprise. (ASU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Workshops 	<p>Issue Health conscious consumers are concerned about conventional methods of raising livestock for consumption. Many of them feel that animals receive too many antibiotics and other drugs to be safely consumed. Educational activities that provide alternative methods for raising livestock could help farmers fulfill a growing need.</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in</p>	<p>1. Animal Systems</p>

		<p>Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University's Extension Program Specialist and Educators implemented 23 workshops on pastured livestock production. Workshop topics consisted of Forage Management, Pastured Management, and Rotational Grazing.</p> <p>Results A total of 1,169 participants attended the workshops implemented by ASUEP. Results of the workshops were 100% of participants gained knowledge and 90% adopted pastured livestock production practices. Participants' knowledge increased in producing healthier animals for fulfillment of consumers' health-related needs. Farmers participating in ASUEP workshops saved approximately \$24,000. Participants who utilized the practices introduced had an economic impact of \$30,000.</p> <p>External Factors No external factors affected the outcome results of the above-mentioned workshops.</p>	
<p>8.</p>	<p>Outcome 8 Number of new technologies, production practices, or improved production systems developed. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Research b. Technotes c. Publications 	<p>Issue When oversupply of fish occurs, catfish processors are less willingly to accept fish from non-integrated producers, causing harvest delays. Sometimes harvest delays can last several months, which greatly increases the risk of fish losses and severely restricts cash flow for the farm. Delayed harvest is a serious issue for hybrid catfish because they grow faster than channel catfish. Continuing full feeding of market-size hybrids is not economical because of reduced price for oversized fish. Developing proper feeding strategies for market-size hybrids during harvest delays is important to minimize economic loss.</p> <p>Target Audience</p>	<p>1. Animal Systems</p>

		<p>Catfish producers in the Mid-south</p> <p>Response We conducted a pond feeding study to evaluate effects of long-term maintenance or restricted feeding with or without full feeding before harvest on growth, feed conversion, processing yield, and body composition of market-size hybrid catfish. Six feeding regimens were evaluated to simulate extended harvest delays: feeding once or twice weekly for 4 months; feeding once or twice weekly for 4 months followed by feeding daily for 15 days; feeding once or twice weekly for 4 months followed by feeding daily for 30 days. Fish were fed to apparent satiation on scheduled feeding days.</p> <p>Results Market-size hybrid catfish fed once weekly to satiation for 4 months can gain about 30% weight and those fed twice weekly can gain 70% weight. Feeding once or twice weekly for 4 months followed by 15-day full feeding does not affect carcass yield compared with overwintered fish, but carcass yield is still lower than that of regular crops. At least 30-day full feeding is needed to restore fillet yield to normal levels. Based on economic analysis and processing yield values, it is suggested that if fish are fed once weekly, they should be given full feed for 15 days before harvest to improve fillet yield. If fish are fed twice weekly and there is an opportunity to sell the fish right away, they can be harvested with or without a 15-day full feeding period.</p>	
<p>9.</p>	<p>Outcome 9 Number of new technologies, practices, production systems developed that enhance production, profitability or environmental stewardship. (MSU)</p>	<p>Issue In aquaculture and recreational fishing, healthy fish are important for product quality and sustainable fisheries. Aquaculture maximizes growth, but environments and handling practices deviate from normal conditions. In recreational fishing, catching and handling fish alters normal internal homeostasis of fish, stimulating physiological responses to ameliorate perceived stressors, returning homeostasis. The ability of fish to recover</p>	<p>1. Animal Systems</p>

	<p>Activity Description</p> <ul style="list-style-type: none"> a. Research b. Technotes c. Publications 	<p>and remain healthy depends on the environmental conditions and type of handling practices, but these are poorly understood, which creates a problem for constructing guidelines.</p> <p>Target Audience Mid-south aquaculture producers</p> <p>Response To understand implications of environmental conditions and handling practices on fish health and product quality, commercial aquaculture and recreational fisheries species were examined. Physiological limitations were identified from a range of controlled laboratory conditions and handling practices, mimicking aquaculture for catfish and recreational fisheries for largemouth bass. Further, for aquaculture, sampling for product quality following environmental and handling practices were compared with commercial products through collaboration with processing plants.</p> <p>Results A common aquaculture quality challenge and potential economic impact is documented and a clearer understanding of causes have been identified. Environment and handling practices don't lead directly to the condition, and perceived stress potentially induced by these practices does not harm product quality. For recreational fisheries, physiological limitations to environmental conditions and effects of handling practices in largemouth bass have been identified. An understanding of diet and development of practices for examining these conditions in this species has been demonstrated. Guidelines have been developed for fisheries for largemouth bass, and information is being widely disseminated. Findings will be important for practices and future decision-making.</p>	
<p>10.</p>	<p>Outcome 10 Number of policies, decision support tools, and strategies developed that enhance</p>	<p>Issue Periodic refinement of on-farm management practices is vital for improving the overall efficiency of catfish farming. Proven recommendations on economically efficient production strategies related to raising Channel</p>	<p>1. Animal Systems</p>

	<p>profitability, inform production decisions, and mitigate/manage risk. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Research b. Technotes c. Publications 	<p>Catfish in single-batch, intensive production systems are important because they provide critical insights into the appropriate use of inputs that maximize farm output.</p> <p>Target Audience Mid-South catfish producers</p> <p>Response This production study investigated the economics of single-batch production of Channel Catfish under various densities (6000-12000 fish/acre in 2000 fish/acre increments) in intensively aerated ponds relative to hybrid catfish.</p> <p>Results Gross yield for channels ranged from 6,562 to 9,039 lb/acre, showing nominally linear trends of increasing yield with stocking density. The highest breakeven price (\$1.07/lb) was associated with the lowest density treatment (6,000 fish/acre) and the least cost (\$0.96/lb) was associated with the intermediate density (8,000 fish/acre). Cash flows from Channel Catfish treatments were insufficient to make the investment in intensive aeration profitable. Hybrid catfish treatment (12,000 fish/acre) outperformed all Channel Catfish treatments in terms of yield (17,542 lb/acre) and profitability (MIRR= 17%). This study indicated that Channel Catfish do not perform well either biologically or economically at densities greater than 8,000 fish/acre in single-batch, intensively aerated ponds. This study provides a fundamental understanding of the production characteristics and economic viability of single-batch production of Channel Catfish in intensively aerated ponds. Balancing fish yield to levels of high capital investment is vital for the investment feasibility of intensively aerated systems. Channel Catfish would not produce sufficiently high yields to cover the high upfront investments in intensive aeration practices, whereas hybrid catfish would be a suitable candidate for such systems.</p>	
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<p>11.</p>	<p>Outcome 11 Number of farmers and producers that gain knowledge on Farm Management. (ASU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. “Women in Business” Conference b. Demonstrations 	<p>Issue Financial management skills are necessary components of successful farm businesses. Careless financial oversight can lead to decreased farm profits and increased risks of business failure. Farm financial management workshops provide practical methods for managing farm transactions. For years, women have been viewed as the behind-the-scene to their spouses in the farming industry. Today, the role of women on the farm is constantly changing. The number of women principle operators is on the rise. According to the 2012 Census, there are 969,672 women farmers in the United States. Mississippi counts for 15,847, which makes up 29% of farmers in Mississippi. Women must pave the way for future generations by getting back to the basics.</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University Extension Program implemented a “Women in Agriculture” Conference, in Tupelo, Mississippi. The conference educated women farmers and landowners on Agriculture and management strategies. Topics consisted of: Farm Management, Farm Safety, Farm Equipment, Animal Handling, Heir Property, Estate Planning, and Land and Property Rights.</p> <p>Results A total of 105 participants attended the “Women in Agriculture” Conference. Women farmers and rancher, landowners and youth in Mississippi gained knowledge through lectures and hands-on demonstrations. Fifty percent of participants indicated that would apply what they had learned from Conference information and demonstration to their farm operations.</p>	<p>1. Animal Systems</p>
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		<p>External Factors No external factors affected the outcome results of the “Women in Agriculture” Conference.</p>	
<p>12.</p>	<p>Outcome 12 Number of farmers and producers that keeps accurate records. (ASU)</p> <p>Activity Description a. Workshops b. Demonstrations</p>	<p>Issue The success of any business depends on the accuracy of records. This is especially true for limited-income farmers who are less familiar with the business side of the operation. Failure to track farm expenditures could prove detrimental for tax and legal purposes. Farmers should learn to document expenses for long-term sustainability. Farmers and ranchers lacked the knowledge and understanding of proper record keeping. The farm families cannot plan an efficient operation, nor can they determine if their decisions are appropriate and successful unless a good set of records is kept. Good records do not ensure your farm will be successful, but success is unlikely without them.</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University Extension Program’s Specialist and Educators conducted 30 workshop sessions and hands-on demonstrations on how to keep proper and accurate records using the Mississippi Farm Record Book to farmers and ranchers in Mississippi 82 counties.</p> <p>Results As a result of ASUEP implementation of record keeping workshops and hands-on demonstrations, 1022 participants attended. Participants indicated that keeping accurate records will advance their productions, increase income, and provides an effective practice and opportunity to meet their obligation. Fifty percent of participants gained knowledge and</p>	<p>1. Animal Systems</p>

		<p>developed essential skills that were utilized to maintain accurate records.</p> <p>External Factors No external factors affected the outcome results of the record keeping workshops.</p>	
<p>13.</p>	<p>Outcome 13 Number of farmers and producers that applies for farm loans. (ASU)</p> <p>Activity Description a. FSA Borrowers Training Course</p>	<p>Issue One prevalent issue continuing to impact farming success is lack of financial resources. Farmers should have access to adequate resources to effectively operate their enterprises. USDA's Farm Services Agency (FSA) provides financial assistance to farmers; however, the application packets are often too long and difficult to understand. ASUEP's Vendors'/Borrowers' trainings are designed to provide knowledge and skills necessary to obtain FSA loans. Mississippi farmers and ranchers continue to face difficulties in their farming operation due to the lack of money. To plan an effective operation and make good management decisions, borrowers must have accurate resources. When applying for an FSA loan, borrowers had difficulties in understanding the basic for the completion of the loan application.</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University Extension Program's Specialist and Educators offered 9 structural training courses on Crop Production, Livestock Production and Farm and Financial Management to FSA borrowers throughout Mississippi 82 counties. Borrowers must obtain a passing score of 70 to help meet the requirements for borrowers training as outlined by FSA guidelines.</p> <p>Results As a result of ASUEP implementation of the Farm Risk Management structured courses, 57 participants attended. The participants were enabled</p>	<p>1. Animal Systems</p>

		<p>to apply for an additional loan through the completion of the course. Borrowers were introduced to current tools and methods which assisted them in current farming practices and to minimize farm risks. Borrowers gained skills and the understanding of the application process through the completion of a balance sheet, financial statement and income statement. FSA issued over \$2,375,100 in funding for borrowers to increase their farm operation to purchase equipment, additional land, and increase profit.</p> <p>External Factors No external factors affected the outcome results of the Farm Risk Management program.</p>	
<p>14.</p>	<p>Outcome 14 Number of clients that gain knowledge on Farm and Financial Management. (ASU)</p> <p>Activity Description <ul style="list-style-type: none"> a. Workshops b. Demonstrations </p>	<p>Issue Effective and sustainable farming operations require farmers to make sound management decisions and have availability to sufficient funds. It is essential that farmers and ranchers become knowledgeable and develop skills that contribute to sound decision-making and use effective financial management skills to ensure the success of their farming operations</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University Extension Program conducted 27 workshops on Farm and Financial Management that introduced best practices to farmers and ranchers in managing their farm finances and applying for loans. Topics consisted of: Credit Management, Managing Your Finances and Resources, Inventory, etc.</p> <p>Results As a result of ASUEP implementation of the Farm and Financial</p>	<p>1. Animal Systems</p>

		<p>Management workshops 853 participants attended. The participants increased knowledge on farm and financial management which would increase their quality of life.</p> <p>External Factors No external factors affected the outcome results of the Farm and Financial Management workshops.</p>	
<p>15.</p>	<p>Outcome 1 Clientele increase knowledge about recommended agricultural practices or behaviors. (MSU)</p> <p>Activity Description a. Workshops</p>	<p>Issue Home lawns account for approximately 300,000 acres of turf in the state of Mississippi. Benefits of turf are well documented and include recreational health, erosion control, increased water infiltration, reduced nutrient leaching, aesthetics, carbon sequestration, and mediation of the ‘heat-island’ effect. Yet, the ecological impact of turf is often questioned, due in part to nutrient and water requirements as well as its often-unsustainable monoculture cultivation. It is important that homeowners and turfgrass managers follow best management practices that minimize their environmental impact.</p> <p>Target Audience Homeowners and lawn maintainers</p> <p>Response MSU Extension provides agent-deliverable programming and specialist delivered educational events. Information presented by county-agents consists of a four-hour seminar (deliverable in two, two-hour parts). The Sustainable Home Lawn Management Program was delivered to more than 300 professional audience members and 21 homeowners during 2019.</p> <p>Results Survey participants agreed that they would reduce annual water use by 10 to 24% because of what they learned in this program, and all anticipated an economic benefit (between \$250 to 1,000) due to cost savings or increase in home value. Most surveyed attributed these savings to a decrease in water</p>	<p>2. Plant Systems</p>

		<p>use, but other savings may also be from reduced maintenance and input costs. Participants account for an estimated 21 acres of the total turf within the state of Mississippi, while the professional attendees at various events account for an estimated 6,000 to 12,000 acres in the state. The economic benefit across 6,000 acres, assuming a conservative \$50 to 249/acre benefit, amounts to at least \$300,000, and perhaps several million dollars in benefit to the state's economy.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>16.</p>	<p>Outcome 2 Clientele implement recommended agricultural practices or behaviors. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Extension Agent In-service Training Webinar b. USDA-NRCS personnel In-service Training Webinar c. 2 National Presentations d. 3 Regional Presentations e. 1 Statewide Presentation f. 3 Cattlemen Meetings g. 3 Field Days Offered to Producers with Hands-on Experience 	<p>Issue Producers invest considerably amount of money and time in producing low quality hay that in the long-term can increase the cost of commodity supplementation and reduce economic return. Forage crops provide 90 percent of the feed consumed by livestock in Mississippi. There is a lack of diverse forage systems in more livestock farms in the state impacting animal performance and economic return. However, many Ag agents and livestock producers lack the knowledge needed to apply advanced pasture management strategies.</p> <p>Target Audience Livestock producers</p> <p>Response To address these issues, MSU Extension implemented several grazing and research demonstrations, providing producers with pinpoint systems that could be used to extend the grazing season. The outcomes of the program were presented at field days along with two competency in-service webinars offered to Ag agents and USDA-NRCS personnel in basic forage management practices. There were also 2 national presentations, 3 regional presentations, 1 statewide presentation, 3 cattlemen meetings, and 3 field days offered to producers and supported by research data. Field days provided producers with hands-on experience.</p>	<p>2. Plant Systems</p>

		<p>Results During the FY2019, there were 522 contacts as part of the forage management events. Field days also produced one-on-one consultations across 34 events with 119 contacts. Survey results indicated that 98% of the producers increased their knowledge, 96% indicated that learned new skills, and 94% plan to implement the information learned in the workshops. A 54% of participants indicated that at least 10 to 50 acres in their farm were impacted by this management practices with average of saving of \$500 per farm. Implementation of these programs can represent a savings of \$1.8 M. Research data collected on stockpiling warm-season perennial grasses can extend the grazing season by 15 days and increasing animal gains that can increase returns of \$70 per animal.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>17.</p>	<p>Outcome 3 Clientele report enhanced agricultural productivity and/or profitability. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Research b. Demonstration Trials c. Information Dissemination 	<p>Issue In recent years, the cost to control bollworm in cotton is becoming increasing high. In order to preserve diamide insecticides, and to alleviate some insecticide input cost in other crops such as soybeans. Utilizing other mode of actions or biological insecticide is becoming increasing important.</p> <p>Target Audience Soybean producers</p> <p>Response MSU Extension has been conducting research and demonstration trials with biological insecticides that reduce environmental impact and reduce overall cost to control bollworm in soybean.</p> <p>Results In 2019 MS soybean producers planted 1.95 million acres of soybeans. Of that, approximately 300,000 acres was treated for bollworm. In previous</p>	<p>2. Plant Systems</p>

		<p>years, all bollworm treatments were made with Prevathon (\$14/acre). In 2019, through research conducted on the biological virus Heligen, the MSU-ES entomologist were able to show grower that they could achieve acceptable control with and environmentally safe product with a cost savings of \$10/acre. Growers opted to use Heligen on 100,000 acres in 2019 with a direct cost savings of \$1,000,000 to the state of MS.</p> <p>External Factors No external factors affected this outcome.</p>	
18.	<p>Outcome 4 Number of program participants that adopt integrated nutrient management to increase crop production. (ASU)</p>	<p>Not reporting on this outcome</p>	2. Plant Systems
19.	<p>Outcome 5 Number of program participants that utilize integrated pest management to improve the quality of vegetable production. (ASU)</p> <p>Activity Description a. Workshop</p>	<p>Issue Integrated Pest Management (IPM) is a sustainable approach for managing pests by combining biological, cultural, physical, and chemical methods to minimize economic, health, and environmental risks. The aim of IPM programs is to promote natural remedies such as natural predators, insect resistant crops, etc. Farmers using IPM practices can potentially increase income by saving money on costly pesticides.</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University Extension Program's Specialist and Educators conducted 13 workshops on integrated pest management. Topics consisted of Insects, Mites, and Arthropods, Pest Prevention, Best Practice, Pesticide Hazards, and Sustainability Strategies.</p>	2. Plant Systems

		<p>Results A total of 10,187 participants attended the integrated pest management workshops implemented by ASUEP. Thirty-five percent (35%) of farmers who attended IPM workshops incorporated and implemented practices. As a result, farmers decreased insect infestations and reduced health hazards connected to chemical use on crops. The estimated direct economic impact of IPM is \$5,325,000 and the indirect economic impact is \$57,975.</p> <p>External Factors No external factors affected the outcome of workshops results.</p>	
<p>20.</p>	<p>Outcome 6 Number of producers that adopt new crop systems to improve crop yield and quality. (ASU)</p> <p>Activity Description <ul style="list-style-type: none"> a. Workshops b. Demonstrations </p>	<p>Issue Crop production programs are needed to educate limited-resource and underserved growers on sustainability of agriculture practices, tillage practices, weed control, disease identification and so on in Mississippi. Programs, events, and activities in crop production are vital to the sustainability of farming operations.</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response The Alcorn State University's Extension Program Specialist and Educators conducted 223 crop production programs that educated growers on sustainability of agriculture practices, tillage practices, weed control, disease identification and management, insect identification and management, nutrient management, forages, irrigation, cover crops and their benefits, high tunnel management, pink-eye purple hull production among other programs. These areas had the greatest impact of any of Agriculture and Natural Resource Areas.</p> <p>Results</p>	<p>2. Plant Systems</p>

		<p>As a result, the total direct and indirect contacts were 119,557 who participated in crop production programs implemented by the Alcorn State University Extension Program and received educational resources. Extension agents expended 13,056.7 hours in deliverance of these programs and distribution of crop production materials. The indirect economic impact was calculated as above to determine agent involvement and had a total value of \$32,100.00; direct economic impact was \$444,356,200.00.</p> <p>External Factors No external factors affected the outcome of workshops results indicated above.</p>	
<p>21.</p>	<p>Outcome 7 Number of participants that use recommended cultivar and other production practices to enhance productivity and profitability. (ASU)</p> <p>Activity Description a. Annual Small Farmers Conference</p>	<p>Issue Ongoing education keeps small farmers abreast of the latest agricultural developments. Informed farmers are more likely to implement on-farm practices when they understand specific purposes and processes. ASU's Extension Program provides educational activities to introduce farmers to new and improved cultivars and plant varieties.</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response The Alcorn State University's Extension Program presented the Annual Small Farmers Conference on April 1-3, 2019 in Tunica, Mississippi. The Annual Small Farmers Conference exposed participants to the up-to-date horticultural research, trends, and advancements. The 2019 conference was a three-day event with a diverse list of educational offerings including sessions on sustainable agricultural research, innovative agricultural techniques, agricenter international, landmark food pantry, landmark farms, farm planning, risk management, and conservation. Farmers also heir</p>	<p>2. Plant Systems</p>

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		<p>property, estate planning, and land and property rights.</p> <p>Results As a result, 192 farmers and businesswomen attended the 2019 Annual Small Farmers Conference. Seventy-five percent (75%) of conference participants were farmers. Participants assessed educational sessions a using 5-point rating scale. Results indicated that regional marketing opportunities received the highest rating at 4.54; women in business rated 4.52; JABEZ community engagement project rated 4.46; and the Mississippi Small Farm and Agribusiness center rating was 4.46. Seventy-six percent (76%) of participants had attended previous conferences. The economic value of the conference, as estimated by participants, was \$25 - \$500. The conference's approximated, total value (using the mean value of \$173) was \$35,984. Participants saved \$133 in registration fees, resulting in a 77% return on investment.</p> <p>External Factors No external factors affected the outcome of Annual Small Farmers Conference results.</p>	
22.	<p>Outcome 8 Number of intended target audience that increase awareness and knowledge and awareness of growing farm products with free or acceptable levels of chemical residue, and safe processing and storage of food products. (ASU)</p>	<p>Not reporting on this outcome</p>	2. Plant Systems
23.	<p>Outcome 9 Number of communities that establish community and container gardens to increase the availability of fresh and</p>	<p>Issue Community gardens are continuing to impact the health and well-being of Mississippi's residents. These cultivated plots increase physical fitness, vegetable and fruit consumption, and residential socialization and cohesiveness. Community gardens are especially important in communities</p>	2. Plant Systems

	<p>locally grown produce. (ASU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Workshops b. Lectures c. Demonstrations 	<p>with health disparities and an absence of adequate supermarkets. ASUEP actively promotes and conducts community gardening projects in Mississippi's Southwestern Counties and the Mississippi Delta.</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University Extension Program's Specialist and Educators conducted 39 community gardening activities at community centers, local schools/colleges, and churches/Christian outreach centers. Activities covered soil sampling and health, cultivation, planting basics, irrigation, insect and weed control, and harvesting techniques. Lectures, demonstrations, and technical assistance were primary delivery processes.</p> <p>Results A total of 17,792 participants attended the workshops implemented by ASUEP. Youth and adults gained knowledge and developed skills on meaningful and timely gardening concepts. Approximately 60% of participants expressed an increase in fruits and vegetables consumption. Community leaders acknowledged that residents have an increased sense of community pride since planting vegetable plots. Garden users estimated saving at least \$50 per week on supermarket produce. People with chronic diseases such as hypertension and diabetes are more physically active since working in the gardens. The indirect economic impact was \$124,650; direct economic impact was \$3,250,700. Community gardens in counties served by ASUEP could significantly improve health and reduce doctors' visits for years to come.</p> <p>External Factors No external factors affected the outcome of workshops/demonstration</p>	
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		results of this program.	
24.	Outcome 10 Number of participants that improve product handling and sanitation. (ASU)	Not reporting on this outcome	2. Plant Systems
25.	Outcome 11 Number of new technologies, crop production practices, or improved crop production systems developed. (MSU) Activity Description a. Research b. Technotes c. Publications	<p>Issue Industry regularly develops and releases new crop seed products. However, there is little basis to compare products prior to release. Some companies even market duplicate products. While industry does research products within their portfolio, their purpose is to enhance marketability for their proprietary products, so invariably the information disseminated is partial to their brand. Thus, although industry-generated data is available, it has marginal value for growers to identify and select optimal genetics from the vast corn seed market.</p> <p>Target Audience Mid-south corn producers</p> <p>Response Our university variety testing programs play a vital role in generating sound, unbiased data that Mississippi growers can use to identify superior genetics. Our role is unique because we evaluate an enormous number of hybrids from all companies. Using this research, we develop lists of superior hybrids, which are published and widely-distributed. These elite hybrids are further showcased in numerous demonstration plots throughout the state where everyone can observe. These programs provide growers thorough information to better assess corn hybrids to be grown in Mississippi.</p> <p>Results Selecting the best corn hybrids improves productivity on every acre planted, while reducing losses from environmental stress, weeds, diseases, and</p>	2. Plant Systems

		<p>insect damage. Our efforts greatly enhance knowledge of row crop producers, professional crop consultants, and retail and commercial industry by generating and delivering unbiased information. Using superior genetics identified by our specialists, corn yields achieved in our Corn Hybrid Demonstration trials exceeded the 2019 state average yield by 14 bushels per acre. Thus, these educational activities increased corn value over \$33 million in Mississippi. Utilization of improved genetics also often improves product quality, increases production efficiency, and reduces input expenses.</p>	
26.	<p>Outcome 12 Number of new technologies, practices, production systems developed that enhance production, profitability or environmental stewardship. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Research b. Technotes c. Publications d. Workshops and field days 	<p>Issue Stink bug injury to vegetative stage corn is sporadic. However, when it occurs damage can appear to be severe, but the actual impact on yield has not been well defined. Also, the severity of damage to individual plants can vary.</p> <p>Target Audience Mid-south row crop producers</p> <p>Response On farm studies were conducted to evaluate the impact of stink bug damage occurring during the vegetative growth stages of field corn on yield.</p> <p>Results On individual plants with symptoms of light streaking on leaves (relatively light damage) yield was reduced by approximately 28%. With the most severe damage (severe stunting and dead heart), yield was reduced by ca. 70% on average and in some cases plants failed to produce an ear (100% yield loss). On a per acre basis with percent damaged plants from 10 to 40%, yield reductions 8.8 to 15.8% were observed.</p>	2. Plant Systems
27-30.	<p>Outcomes 13, 14, 15, and 16 (ASU)</p>	<p>The outcome data and impacts for these outcomes appear in Animal Systems Planned Program.</p>	2. Plant Systems

31.	<p>Outcome 17 Percentage of farmers and producers that demonstrates minimizing risk on the farm. (ASU)</p>	<p>Not reporting on this outcome</p>	<p>2. Plant Systems</p>
32.	<p>Outcome 18 Number of farmers and vendors that report, demonstrate and gained knowledge in Direct Marketing, revitalizing, establishing and or expanding Farmers Markets, and Alternative Agriculture Enterprises. (ASU)</p> <p>Activity Description a. Workshop</p>	<p>Issue Locally grown produce makes fresh fruits and vegetables readily accessible and can boost local economies. Small farmers need a market to sell their produce. Providing fresh produce directly to local supermarkets fulfills consumers' needs and provides a viable market for small farmers. The Purple Hull Pea Project enables farmers to process their produce and provide methods of getting them to the consumer.</p> <p>Target Audience Limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income.</p> <p>Response Alcorn State University Extension Program's Specialist and Educators conducted 240 programs that assisted small and underserved producers, as well as, larger producers make sound decisions relative to marketing strategies, new market opportunities, and profitability. Agents spent a compilation of 4,890.7 hours in deliverance of programs or answered production questions on the farm or via electronic communications. Programs most attended include Direct Marketing of Ag Products, Farmer's Markets, and Farm Risk Management.</p> <p>Results A total of 312,946 producers received training directly and indirectly in marketing programs implemented the ASUEP. Indirect economic impact based on agents contact in this area was \$733,605.00 (Hours x \$150.00/hour/agent) while the economic value direct Impact was</p>	<p>2. Plant Systems</p>

		<p>2,503,378,900 (Assuming 100 acres/contact x \$100.00/acre profit x contact #).</p> <p>External Factors No external factors affected the outcome of workshops results indicated above.</p>	
<p>33.</p>	<p>Outcome 19 Number of policies, decision support tools, and strategies developed that enhance profitability, inform production decision, and mitigate/manage risk. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Research b. Technotes c. Publications d. Workshops and field days 	<p>Issue With continued resistance to Bt technologies, the need for bollworm management strategies have shifted in order to better utilize foliar insecticides. The biggest issue when dealing with bollworm in cotton is the ability to get good insecticide coverage. There are numerous plant structures that provide protection for insecticide avoidance.</p> <p>Target Audience Mid-south cotton producers</p> <p>Response Over the last several years MSU scientists have worked to evaluate an egg threshold for foliar insecticide application in non- Bt, WideStrike, BollGard II, and Twin Link cotton. This approach requires scouting on eggs to reach a 20% egg threshold for foliar insecticide application timing. The purpose of this strategy is to better time foliar insecticide applications before bollworm movement into parts of the plant that provide protection which in turn leads to greater worm control and improved yield.</p> <p>Results It is estimated from MSU research and demonstration trials that the adoption of an egg threshold saves on average 40lb lint/acre. In 2019 MS planted 720,000 acres of Bt cotton and utilized the new egg threshold on all acres. We averaged 1.5 worm sprays on every acre for an approximate savings of 60lb acre of lint (40lb x 1.5 sprays). With average cotton price of \$0.65/acre and 60lb lint protection this translates to \$39/acre. With 720,000 acres of cotton this is a \$28,080,000 direct benefit to cotton</p>	<p>2. Plant Systems</p>

		growers in the state of MS.	
34.	<p>Outcome 1 Landowners, producers, and/or clientele increase their knowledge about responsible use and protection of natural resources and the environment. (MSU)</p> <p>Activity Description a. Workshops</p>	<p>Issue Restricted use pesticides (RUPs) can harm people and the environment if used improperly. By federal law, agricultural producers must be certified to purchase and use RUPs. A large part of the certification process involves pesticide safety education. Recent federal regulations require that auxin herbicides (e.g., dicamba) can only be applied by certified applicators (no longer by persons working under the supervision of a certified applicator). Many trainings and instructors are needed to (re)certify Mississippi’s private pesticide applicators to keep them in compliance with federal laws.</p> <p>Target Audience Agricultural producers and their employees</p> <p>Response MSU Extension agents certified as trainers conducted Private Applicator Trainings in their own and neighboring counties to certify new and renewing agricultural producers and their employees. The MS Pesticide Safety Education Program (MSPSEP) curriculum focuses on safe, proper use of pesticides; minimizing spray drift; the 2015 Revised Worker Protection Standard; and pesticide application recordkeeping requirements. In spring 2019, additional trainings were added to meet the new EPA regulation to certify auxin herbicide applicators. MSPSEP coordinated the training effort and worked as a liaison with MS Department of Agriculture.</p> <p>Results In FY19, 60 certified Extension agents conducted 255 Private Applicator Trainings (21 more than FY18) in 72 counties for 2,952 agricultural producers and employees (874 more than FY18). From January to March, agents in 10 Delta counties conducted 21 more trainings for 636 more people (as compared with the same period in FY18) to meet new auxin</p>	3. Natural Resources

		<p>herbicide applicator regulations. Overall, 2,878 private applicators (re)certified in FY19; over 97% of attendees successfully passed the private applicator (re)certification exam after attending a training. Beyond keeping private pesticide applicators in compliance with federal laws, agents keep half of the revenue generated by the program for additional pesticide safety-related activities and training in their counties.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>35.</p>	<p>Outcome 2 Landowners, producers, and/or clientele implement new sustainability practices based on Extension recommendations. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Education at Country Forestry Association Meetings b. Day-long Short Courses c. Hands-on Workshops d. Outdoor Field Days e. Printed Publications 	<p>Issue Individuals and families own approximately 80% of the commercial forest of Mississippi. Sustainable forest management on these private lands is crucial to profitable forest management for landowners. Timber ranks as the second single most important commodity in the Mississippi economy. When combined with employment, value-added processing, and expenditures, forestry contributes \$12.8 billion and 69,445 jobs annually to the state economy. Thus, landowner education to enhance sustainable forest productivity while protecting the environment is critical individually and collectively.</p> <p>Target Audience Forest landowners</p> <p>Response Extension Forestry at Mississippi State University uses a statewide network of county forestry associations (CFAs) as well as social media to advertise educational programs. This programming includes education at CFA meetings, day-long short courses, “hands-on” workshops, and outdoor field days. Printed publications supplement instruction.</p> <p>Results Faculty and staff conducted educational programs at 86 CFA meetings, 20 workshops, 3 short courses, and 17 field days. These programs served</p>	<p>3. Natural Resources</p>

		<p>4,478 clients owning over 877,000 acres of forest. Participants in training valued the information received at \$1.6 million. Extension Forestry conducted a Long-Term Assessment Survey in 2019. A total 2,038 surveys were administered at 51 CFA meetings statewide. There were 1,036 participants for an overall response rate of 50.8%. On average, respondents attended 2.1 programs. Participants owned/managed 3,347,285 acres of forest in 77 Mississippi counties and estimated that they saved/earned \$4,834,735 on their forest land. Of these, 331 respondents (33.4%) indicated that they have implemented forestry practices since attending a program. The top practices included prescribed burning, reforestation, and thinning. A total of 315,970 acres of forest were impacted from all practices. An additional 490 respondents indicated that they plan to implement practices on 141,840 acres within the next 2 years.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>36.</p>	<p>Outcome 3 Landowners, producers, and/or clientele improve their environmental stewardship. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. 40-hour Course with Field and Classroom Instruction b. 8 hours of Advanced Training Annually c. Provide 40 hours of Volunteer Service Annually 	<p>Issue Lack of environmental knowledge often promotes poor stewardship of natural resources. Additionally, many environmentally conscious individuals are eager to help through volunteer service, but these opportunities are often difficult to find.</p> <p>Target Audience Individuals interested in volunteering to promote natural resource conservation and management</p> <p>Response MSU Extension’s Mississippi Master Naturalist Program (MMNP) was formed with the mission of developing an organization of knowledgeable volunteers to help promote conservation and management of Mississippi’s natural resources through education, outreach, and service within their communities.</p>	<p>3. Natural Resources</p>

		<p>Results</p> <p>In 2019, the MMNP held a basic training course for both the Coastal and Central chapters, which led to the certification of 36 new Master Naturalists. These participants environmental knowledge improved an average of 10%. Post course evaluations showed that 100% of the students gained knowledge and 100% of the students intend to apply their newly gained knowledge. Class cost was \$250 for the Central course and \$300 for the Coastal course, but participants indicated an average value of approximately \$1,000 for the knowledge gained in the course. During 2019, program participants documented 4,716 volunteer service hours, valued at \$119,928. Through these volunteer hours, participants reached or educated more than 22,727 people and directly or indirectly improved 12,266 acres through stewardship.</p> <p>External Factors</p> <p>No external factors affected this outcome.</p>	
<p>37.</p>	<p>Outcome 4 Number of new technologies, practices, production systems developed that enhance environmental stewardship while sustaining productivity and profitability. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Research b. Technotes c. Publications 	<p>Issue</p> <p>The Lower Mississippi Alluvial Valley (LMAV) is the largest floodplain and one of the most productive agricultural regions in the United States. It is also one of the most intensively irrigated watersheds in the country. Irrigation is critical to improve crop production because of a mismatch between crop water requirements and precipitation timing and quantity during the growing season. In the recent decades, groundwater withdrawals for irrigation have been recognized as a primary contributor to aquifer decline, threatening water security and agricultural sustainability in the LMAV. To improve agricultural water use efficiency and reduce groundwater withdrawals, it is pivotal to understand the spatiotemporal patterns of crop irrigation water requirements (IWR).</p> <p>Target Audience</p> <p>Natural resource managers and producers in the LMAV.</p> <p>Response</p>	<p>3. Natural Resources</p>

		<p>We used modelling to analyze future climate changes over the LMAV cropland areas and estimate future IWR changes for major crops in the 21st century under two climate scenarios (i.e. RCP45 and RCP85) and two crop growth duration length (GDL) scenarios [i.e. Fixed GDL (GDL does not change with time) and Varied GDL (GDL changes with time)].</p> <p>Results Our models predict that under both climate scenarios croplands in the LMAV would experience continuous warming, and either no significant change or a decreasing level of precipitation. Under current cropping area and systems, average crop IWR by the end of the 21st century would increase by 4.2% -29%. The greatest increases would occur in the summer months. Aquifer levels in the LMAV, therefore, are expected to decline at an accelerated pace if no effective mitigation strategies are implemented.</p>	
<p>38.</p>	<p>Outcome 5 Number of new technologies, practices, productions systems developed that enhance forest productivity, environmental stewardship, and profitability. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Research b. Tech notes c. Publications 	<p>Issue Managed forests provide building materials, fiber, and fuel to domestic and international consumer demands. They also produce myriad ecosystem services on which society depends. However, because their values are not often monetized, many ecosystem services are often overlooked in active management of private forests leading to their production below the levels preferred by the society.</p> <p>Target Audience Mid-south natural resource managers and forest landowners</p> <p>Response This study used the contingent valuation method (CVM) to estimate willingness to accept (WTA) compensation for managing a hypothetical tract of loblolly pine (<i>Pinus taeda</i>) for multiple ecosystem services. The CVM scenario involved four forest management alternatives representing increasing levels of forest management restrictions. A structural random effects probit model was constructed to quantify WTA compensation</p>	<p>3. Natural Resources</p>

		<p>amounts.</p> <p>Results Mean WTA estimates ranged from \$190.22 to \$595.23 per hectare (ha) per year and increased with the intensity of forest management restrictions. Based on the WTA estimates, the total cost of increasing ecosystem production ranged from \$0.88 to \$4.76 billion per year. Increased budgets and private partnerships might be needed to implement forest management regimes facilitating multiple ecosystem services.</p>	
<p>39.</p>	<p>Outcome 6 Number of new management practices, conservation systems, and policies developed that enhance wildlife conservation and environmental sustainability. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Research b. Workshops c. Technical notes d. Publications 	<p>Issue Agricultural landscapes are important for natural resource conservation, but present numerous obstacles associated with intensive agricultural production. Chief among these challenges is the competing economics outcomes of conservation and crop production. Understanding these outcomes requires quantifying economics of crop production and conservation enrollment. The tools, technology and training needed to identify and optimize these competing objectives are poorly understood by natural resource professionals.</p> <p>Target Audience Mid-south agricultural producers</p> <p>Response Precision agriculture technology provides a mechanism to address these needs by using advanced technology to quantify spatially explicit profitability in agricultural fields. Scientists in the Mississippi Agricultural and Forestry Experiment Station developed a geospatial decision support tool that integrates spatially explicit yield data, crop production budgets, commodity prices, and conservation program eligibility criteria to aid producers in identifying regions of fields where strategic enrollment in a conservation program increases whole field profitability. Research across hundreds of fields in central Mississippi demonstrates that such regions exist on every farm and many fields. In 2019, agricultural producers, natural</p>	<p>3. Natural Resources</p>

		<p>resource managers, and research scientists were exposed to training on the use of precision agriculture technology via workshops, webinars, and conference presentations at multiple state, regional and national events. Two peer-reviewed publications describing a geospatial decision support tool and its use were published in national journals.</p> <p>Results Agricultural producers and natural resource managers improved their knowledge of incorporating precision agriculture into row crop production systems to improve ecosystem services and farm profitability. Adopting and this technology increases profitability and improves functionality of agricultural systems thus optimizing conservation and economic concerns of agricultural production. Natural resource managers are better equipped to deliver this novel approach to conservation agriculture.</p>	
<p>40.</p>	<p>Outcome 1 Community leaders improve knowledge and skills. (MSU)</p> <p>Activity Description a. Monthly Meetings and Discussions</p>	<p>Issue Sea-level rise (SLR) is magnifying coastal hazards such as storm surge and erosion; however, it is complex and there exists a lot of uncertainty and misinformation among coastal decision-makers. Coastal professionals such as floodplain managers, community planners, and elected officials need localized information and technical support to understand and apply the available information.</p> <p>Target Audience Advisory Team comprised of elected officials, municipal staff, outreach professionals, and coastal training coordinators from Mississippi, Alabama, and northwest Florida</p> <p>Response As part of a broader project to reduce fiscal and communication barriers to understanding and addressing SLR impacts, the Northern Gulf of Mexico Sentinel Site Cooperative (Cooperative) developed an Advisory Team to guide our efforts. The Advisory Team was composed of elected officials, municipal staff, outreach professionals, and coastal training coordinators</p>	<p>4. Community Resource and Economic Development</p>

		<p>from Mississippi, Alabama, and northwest Florida. The Advisory Team met monthly to discuss SLR, potential local impacts from SLR, and options to address changing risk in their communities.</p> <p>Results The collaboration with the Advisory Team increased the participants' knowledge and capacity to address SLR impacts in their communities. In exit polls taken by the Advisory Team, 100% of respondents indicated that participation in the panel increased their knowledge about SLR, risk to their communities, and options to address SLR impacts. Additionally, they all agreed or strongly agreed that they were more likely to address SLR in their work due to their time on the Advisory Team. Specific benefits cited were the ability to visually communicate SLR concepts, their increased understanding of SLR, and the resources available to support SLR action. The participants also referenced the value of learning about the availability of local data, which is crucial for successfully adapting to SLR.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>41.</p>	<p>Outcome 2 Community leaders make use of leadership skills by volunteering for community organizations. (MSU)</p> <p>Activity Description a. Exam-based, Half-day Courses as part of the Three-year Curriculum of 120 Contact Hours of Instruction</p>	<p>Issue Municipal Clerks face numerous challenges in the areas of public administration, social and interpersonal skills. These public officials seek technical assistance as a municipalities central contact position due to the result of the Mississippi Legislature's new laws and regulations for local government.</p> <p>Target Audience Municipal Clerks, Tax Collectors, and Deputies</p> <p>Response MSU Extension, in conjunction with the Mississippi Municipal Clerks and Collectors Association, offers the Certified Municipal Clerk (CMC) program to enable Municipal Clerks, Tax Collectors, and Deputies who complete the</p>	<p>4. Community Resource and Economic Development</p>

		<p>exam-based Certification Program for Municipal Clerks and Collectors to earn the appropriate designation. Standards for the achievement of certification have been designed by the Certification Standards Committee of the Mississippi Municipal Clerks and Collectors Association (MMCCA). This committee reviews all Certified Municipal Clerk (CMC) and Certified Deputy Municipal Clerk (CDMC) applications and recommends the granting of the CMC or CDMC.</p> <p>Results Some 30 individual, exam-based, half-day courses are part of the three-year curriculum of 120 contact hours of instruction. On average, upwards of 150 Municipal Clerks, Tax Collectors, and Deputies, representing over 75 different municipalities, work towards certification. In 2018-19, 17 Municipal Clerks received the Mississippi-CMC designation and 17 Deputies received the Mississippi-CDMC designation. This year, beyond Mississippi certification, 10 Mississippi municipal clerks earned the IIMC-CMC designation and 2 earned the IIMC-Master Municipal Clerk (MMC) designation. The Certification Program for Municipal Clerks and Collectors provides more professional expertise and status to the Municipal Clerk, Collector, and/or their Deputies in Mississippi. The program has closed knowledge gaps.</p> <p>External Factors No external factors affected this outcome.</p>	
42.	<p>Outcome 3 Community leaders implement strategies to improve public decision-making and/or increase civic engagement. (MSU)</p> <p>Activity Description a. Analysis and Educational Programs, such as a</p>	<p>Issue Communities face difficult decisions when considering investment and economic development in rural communities. Funds are limited, and making a good costs-versus-benefits decision can be challenging.</p> <p>Target Audience Officials in communities desiring community development assistance</p> <p>Response</p>	4. Community Resource and Economic Development

	<p>Market Study, an Economic Impact Analysis, a Feasibility Analysis, a Strategic Plan, a Tourism Assessment, or a Retail Trade Analysis</p>	<p>MSU Extension Center for Government and Community Development provides economic information that communities can use to make informed decisions. As part of the efforts of Wake-Up-Downtown, the CGCD conducts analysis and educational programs such as a market study, an economic impact analysis, a feasibility analysis, a strategic plan, a tourism assessment, or a retail trade analysis. Recently the CGCD has assisted the communities of Okolona, Greenwood, Montgomery County, Marks, Richland, Byram, Batesville, Pascagoula, Houston, Bolivar County, Jones County, Ellisville, Waynesboro/Wayne County, and Ripley.</p> <p>Results Several communities have used Wake-Up-Downtown’s efforts in different ways to benefit community development. For example,</p> <ul style="list-style-type: none"> • Quitman County is in the process of re-opening a grocery store in their community with the work of multiple stakeholders and investors. • Greenwood, MS recruited financial support for its festivals. • Okolona is using their retail trade analysis and marketing package to recruit retail chain establishments. • Montgomery County has raised funds to improve their agricultural center. • Bolivar County has invested \$5.4 million in infrastructure improvements. • Houston, MS is expanding its lodging and restaurant capacity. • The Carl Small Town Center Received outreach award for recreation plan development for Byram, MS (MSU Extension assisted with gathering data on revenue impacts). <p>External Factors No external factors affected this outcome.</p>	
<p>43.</p>	<p>Outcome 4 Percentage of participants</p>	<p>Issue Small, rural communities in Mississippi are plagued with a multitude of</p>	<p>4. Community Resource and Economic</p>

	<p>improving their knowledge of extension services, and gaining skills and assistance in addressing identified community assets/issues. (ASU)</p> <p>Activity Description a. Group Meetings</p>	<p>issues. Poor access to healthy foods, inadequate schools, failing infrastructures, and lack of unity among residents are common in small municipalities. Finding common ground is not always easy in small communities. Unfortunately, it is a necessary component for positive solutions. ASUEP is committed to helping residents identify needs and work toward communal interests through its Environmental Scanning process.</p> <p>Target Audience Local communities and their leaders, community members interested in improving their communities, community-based organizations, nonprofit organizations, cooperatives, entrepreneurs, and limited-resource individuals and families in Mississippi.</p> <p>Response Alcorn State University Extension Program’s Specialist and Educators conducted a total of 24 Extension awareness, needs assessment (environmental scanning) and community profile meetings. The purpose of the meetings consisted of: (a) to identify needs for alignment of Extension programs with those identified needs; (b) to provide community members research-based information and strategies for community engagement; (c) and provide training on Effective Communication and Leadership. Educational programs were developed around community needs. Weekly radio programs (on and off campus) promoted planned state and county-level programs and featured segments on topics relevant to ASUEP's planned program areas.</p> <p>Results The total participants attending the activities/meetings were 663. Alcorn State University’s Extension Program implementation of Extension awareness, needs assessments, and community profiles, was very significant in enlightening the general public to the services, providing research-based information, and training participants to be effective communicators and leaders. As a result, the percentage of ASU Extension</p>	<p>Development</p>
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		<p>users increased by 30%; 85% of participants reported an increase in knowledge gained of the Extension and the services it offered; 75% demonstrated an increase in communication skills through their effectiveness to clearly convey pertinent information; and 60% indicated that they could utilize community engagement strategies and the leadership skills they developed from participation in the meetings/trainings to impact their communities.</p> <p>External Factors No external factors affected the outcome results.</p>	
44.	<p>Outcome 5 Increase in the amount of program information made available through Extension websites. (ASU)</p>	Not reporting on this outcome	4. Community Resource and Economic Development
45.	<p>Outcome 6 Percentage of program participants that submit job application(s) and/or become employed. (ASU)</p>	Not reporting on this outcome	4. Community Resource and Economic Development
46.	<p>Outcome 7 Percentage of program participants that submit application(s)/RFP(s) for funding and/or are funded. (ASU)</p>	Not reporting on this outcome	4. Community Resource and Economic Development
47.	<p>Outcome 8 Number of program participants that gain awareness of home ownership opportunities. (ASU)</p> <p>Activity Description</p>	<p>Issue Limited-income families in Mississippi have difficulties securing financing to purchase new homes. Many families reside in apartments or rental houses paying hundreds of dollars that they could use to purchase their own homes. Bad credit and low wages have contributed significantly to limited-income families and created barriers that prevent them from acquiring their</p>	4. Community Resource and Economic Development

	<p>a. Workshop</p>	<p>own home. Although home ownership programs are available to limited-income families, many individuals that may qualify for assistance are unaware of the assistance they can receive, do not know the application process, and do not have access to the financial resources.</p> <p>Target Audience Local communities and their leaders, community members interested in improving their communities, community-based organizations, nonprofit organizations, cooperatives, entrepreneurs, and limited-resource individuals and families in Mississippi.</p> <p>Response Alcorn State University Extension Program conducted four Financial Management Workshops. The workshops provided information on types of loans available (HUD and USDA Rural Development), specific loan features, financing and refinancing options, credit requirements, and credit repair.</p> <p>Results A total of 172 participants attended the Financial Management workshops implemented by ASUEP. As a result of their participation, 35% of participants ordered copies of their credit reports to review for discrepancies/errors; 20% reported that they had applied for loans through USDA Rural Development; and 30% committed to opening saving accounts to enhance their families' financial stability. The workshops were free and determined to be cost efficient to participants. The average cost of Financial Management workshops is \$50 or more per person, which participants received a combined savings of \$2,700.</p> <p>External Factors No external factors affected the outcome of the workshops results.</p>	
<p>48.</p>	<p>Outcome 9 Number of program participants that demonstrate greater</p>	<p>Issue Overwhelming requests for business development activities and consultations were issued by residents in local communities. The majority of</p>	<p>4. Community Resource and Economic</p>

	<p>knowledge in the development of leadership skills, economic development strategies, and become more involved with civic activities. (ASU)</p> <p>Activity Description</p> <p>a. Training</p> <p>b. Workshop</p>	<p>requests were from individuals wanting to start non-agricultural enterprises in South Mississippi. Experts believe that the success of Mississippi's business economy depends on small-business development. In 2019, 217 new businesses were initiated in Mississippi, creating 998 new jobs. ASU's Extension CRD Educators were responsive to consumers' requests.</p> <p>Target Audience Local communities and their leaders, community members interested in improving their communities, community-based organizations, nonprofit organizations, cooperatives, entrepreneurs, and limited-resource individuals and families in Mississippi.</p> <p>Response Alcorn State University Extension Program's Specialist and Educators presented a five-week training course, "How to Start and Grow Your Business," that addressed needs for business development opportunities, conducted five workshops on leadership development, and three workshops on civic engagement.</p> <p>Results A total of 3,096 participants attended the training and workshops implemented by ASUEP. As a result of their participation, 85% reported increased knowledge of business development concepts; 40% had started the business certification process; and 50% initiated steps to conduct comparisons of different small business markets; 90% gained knowledge and demonstrated effective leadership skills; and 75% indicated that they would utilize civic engagement concepts to work with their individual communities.</p> <p>External Factors No external factors affected the outcome of the training of workshops results.</p>	<p>Development</p>
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<p>49.</p>	<p>Outcome 1 Youth increase their knowledge in subject-matter areas. (MSU)</p> <p>Activity Description a. Food and Toy Drive</p>	<p>Issue In Wayne County in 2017, it was reported that 32.8% of youth lived in a household that is below the poverty level. Mississippi was 30.2% youth lived in a household below the poverty level according to the MSU Extension Poverty and Well-being profiles.</p> <p>Target Audience 4-H youth assisting youth living in households below the poverty level</p> <p>Response MSU Extension in Wayne County provided 4-H Project Christmas Smiles. Various organizations such as Wayne County 4-H, Wayne County High School Jr. ROTC and Wayne County MS Homemaker Volunteers, various churches, and other youth- and adult-based organizations came together to collect toys and food for families selected by the Wayne County Child Protective Services.</p> <p>Results After applying this program within our county, by gathering nonperishable foods, staples, meat gift certificates, etc., totaling around \$125.00 for a single food box and toys totaling around \$100.00 per child for families selected. Twenty-four families with 67 youth in the Wayne County Community benefited from this project providing toys and food for the families averaging in a total of \$9,700.00 in donations of can food, toys and monetary gifts.</p> <p>External Factors No external factors affected this outcome.</p>	<p>5. 4-H and Positive Youth Development</p>
<p>50.</p>	<p>Outcome 2 Youth improve life skills. (MSU)</p> <p>Activity Description a. Hands-on Budget</p>	<p>Issue High school age youth’s understanding of balancing a checkbook and real-life finances is deficient, leaving students ill-equipped to deal with complex issues facing adulthood, including problems such as budgeting; working towards continued education; and providing means for everyday living</p>	<p>5. 4-H and Positive Youth Development</p>

	<p>Simulation Workshop</p>	<p>through a salary.</p> <p>Target Audience High school students</p> <p>Response Many Welcome to the Real-World budget simulations are done throughout the county. Jackson County High Schools schedule at least one simulation a year for high school students. Volunteers from the community help volunteer and share their knowledge to help students understand real life scenarios when budgeting. Students participate in an evaluation at the end of the budget simulation.</p> <p>Results Three hundred and seventy-seven young people participated in Welcome to the Real-World. Sixty-two percent of youth agreed they learned the importance of the effect of education on a career opportunity. Sixty-seven percent of students felt the budget simulation gave them confidence in becoming a productive adult. Fifty-eight percent of students believe that the program will help them in the future. We continue to improve the program to better prepare children for the future.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>51.</p>	<p>Outcome 3 Youth increase their involvement in 4-H leadership events and activities at the district, state, and national levels. (MSU)</p> <p>Activity Description a. Health- and Leadership-</p>	<p>Issue Our teens are tomorrow’s leaders and can affect change today starting in their own families’ eating and exercise habits and extend to peers and community members. Empowering teens to provide health promotion aimed at improving health literacy and healthy lifestyle choices is the primary objective of the Jr Master Wellness Volunteer (JMWW) program. Likewise, providing opportunities for teens to earn community service hours, advocate for change, and be an active role model for change helps instill leadership, teamwork, social skills, and importance of volunteering.</p>	<p>5. 4-H and Positive Youth Development</p>

	<p>based Curriculum</p> <p>b. 24-hour Community Service Requirement</p>	<p>Target Audience Teens age 14-18 with an interest in leadership, advocacy, extending knowledge, serving as role models, and volunteering aimed at improving health literacy and healthy lifestyle choices</p> <p>Response MSU Extension developed the Junior Master Wellness Volunteer (JMWW) Program to: 1) develop volunteer leadership and teambuilding skills to 2) support on-going and new programs in communities aimed at 3) providing health promotion information to improve health literacy and healthy lifestyle choices. The curriculum consists of a volunteer component, social media component, health messaging component and community service component, requiring 24 hours of community service. Also, a guide was developed that aligns the JMWW program to the educational standards for career/ technology education.</p> <p>Results A total of 344 students were trained as Jr Master Wellness Volunteers in 14 counties during FY2018-19 school year. Increasing human capacity by 344 volunteers to serve as agents of change for healthier communities can be equated to seating over 3.5 school buses with 90 passengers each. The value of service hours total \$64,931.20, per calculation of \$19.70/hour per volunteer (https://independentsector.org). Reports showed that JMWWs completed 3,296 community service hours, reaching 31,941 contacts. The program enhanced efforts in the classroom and increased socialization and leadership skills, self-efficacy, and knowledge that promoted behavior change. Participants, teachers, and agents reported satisfaction with the experience. This program can easily be replicated statewide.</p> <p>External Factors No external factors affected this outcome.</p>	
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<p>52.</p>	<p>Outcome 4 Number of youth that report reduction of risky behavior that benefits his/her social and educational development. (ASU)</p> <p>Activity Description a. Workshop b. Life Skills School Program</p>	<p>Issue More than 160,000 children miss school every day because they fear being attacked by their peers. Statistics reveal that 56% of a school's population has personally witnessed some type of bullying incident. Seventy-one percent (71%) of students in a research study perceived bullying as a major problem at school. Children should not be subjected to bodily harm in learning environments. Anti-bullying programs can decrease bullying incidents and subsequent suicides. Aside from reflecting problem attitudes (rebellion, poor self-concept, invulnerability) that make sexual involvement more likely, intoxication also clouds judgment and weakens resistance to sexual overtures.</p> <p>Target Audience 4-H targets all Mississippians between the ages of 5 and 18 and volunteers. Other programs, activities, and events in this area target youth between the ages of 5 and 19, adult volunteers, and families.</p> <p>Response Sixteen (16) bullying programs, events, and activities were conducted by 4-H Youth Development Educators. Activities were held at local schools, community centers, churches, and on ASU's campus. Workshop topics included: Recognizing Bullying Personality Traits, Reasons for Bullying Behavior, Cyber bullying, Reporting Bullying Incidents, and Internet Safety. Educators also conducted four alcohol and substance abuse activities, an 8-week Life Skills School Program, seven workshops on preventing teenage pregnancy and ten sexually transmitted infections (STIs), and a peer-pressure workshop.</p> <p>Results A total of 4,176 youth participated in the workshops and Life Skills School Program implemented by ASUEP Educators. Bullying activities increased awareness of dangers and consequences related to bullying acts. Students learned to safely engage on social media sites such as Facebook, Twitter,</p>	<p>5. 4-H and Positive Youth Development</p>
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		<p>Instagram, and Expose. Oral program evaluations revealed 97% of students understood program content. Student-led follow-up activities demonstrated mastered skills to make wise decisions and to think critically in dangerous situations. Ninety-five percent (95%) demonstrated proper techniques to avoid and defuse bullying incidents and resist other risky behaviors. One school retained \$20,000 that would have covered fees to discipline accused bullies. This same school reported fewer office referrals and a decreased need for multiple security officers.</p> <p>External Factors No external factors affected the outcome of workshops results indicated above</p>	
<p>53.</p>	<p>Outcome 5 Number of minority youth that independently select to participate in leadership competitions, youth events, activities, and community projects. (ASU)</p> <p>Activity Description <ul style="list-style-type: none"> a. Leadership Development Curriculum b. Workshops </p>	<p>Issue In order to compete for leadership roles in their schools and communities, youth must acquire adequate leadership skills. These skills are essential for them to be able to acquire leadership roles in their schools and communities. These skills are also needed in team building, problem solving, and decision-making. Once these skills are obtained, youth will be effective leaders in their schools, communities, and other organizations.</p> <p>Target Audience 4-H targets all Mississippians between the ages of 5 and 18 and volunteers. Other programs, activities, and events in this area target youth between the ages of 5 and 19, adult volunteers, and families.</p> <p>Response In an effort to improve youth leadership skills, the Alcorn State University Extension 4-H Program Staff implemented twenty-four Leadership Development programs. The workshops were delivered in two educational sessions. The first session focused on Understanding Leadership, Types of leadership Styles, Developing Leadership and Team Building Skills. The second session involved hands on activities that explored Effective Communication, Decision-Making and Listening Skills. They also provide</p>	<p>5. 4-H and Positive Youth Development</p>

		<p>youth with skills and knowledge that enable them to be successful in events and activities at Project Achievement Day, State Club Congress, various events and activities at Mississippi State Fair, and Youth Leadership Academy.</p> <p>Results A total of 10,212 youth participated in Alcorn State University Extension Program’s programs, events and activities. According to the post-test results, 49% of the youth participating in the program learned essential characteristics required to become an effective leader; 45% understood the concept of verbal and nonverbal communication; 38% reported that they could use the decision-making process to make important decisions; 40% felt that the team building skills they obtained will help them work better on teams; and 48% understood the definition of leadership and could list the three types of leadership styles.</p> <p>External Factors No external factors affected the outcome results of workshops.</p>	
54.	<p>Outcome 6 Number of trained volunteer leaders that independently organize and manage school and community youth clubs. (ASU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Programs (Leadership, Volunteerism, Club Organization and Maintenance) b. Events (4-H Congress, Project Achievement Day, National 4-H Congress, and so on) 	<p>Issue A caring adult volunteer is the backbone of any youth development program. The core of the Alcorn State University Extension Program is the adult volunteer leaders. They are needed to recruit 4-H club members, manage school and community-based clubs, and contribute to 4-Hers personal, social, and mental growth and well-being.</p> <p>Target Audience 4-H targets all Mississippians between the ages of 5 and 18 and volunteers. Other programs, activities, and events in this area target youth between the ages of 5 and 19, adult volunteers, and families.</p> <p>Response 4-H Youth Educators conducted 11 programs, events, and activities to recruit and trained 4-H volunteer leaders to recruit youth, organize and</p>	5. 4-H and Positive Youth Development

	<p>c. Activities (Volunteer Leader Training)</p>	<p>manage school and community clubs. Topics consisted of Volunteerism, Leadership, Officer Training, Parliamentary Procedures, Public Speaking, Club Recruitment, Development and Maintenance, and Youth Competition and Projects.</p> <p>Results A total of 804 potential volunteers attended the programs, events, and activities implemented by ASUEP. As a result of the programs, events, and activities, 35 volunteers assumed responsibility and helped prepare 4-Hers for local, state and district competitions; 18 volunteers attended a state-wide forum that strengthen and expand their leadership skills; and 27 school and community clubs were organized and maintained that consisted of 988 members. The number of volunteer leaders serving ASUEP increased by 80% (from 13 to 20) since 2017. Training sessions strengthened volunteers' leadership competencies and abilities. One volunteer hour in Mississippi is worth \$25.43/per hour (Independent Sector, 2016). Volunteers serving ASUEP contributed approximately 1,950 hours for a total economic value of \$49,588.</p> <p>External Factors No external factors affected the outcome results of programs, events, and activities implemented.</p>	
55.	<p>Outcome 7 Number of youth reporting utilizing skills to improve their financial well-being. (ASU)</p>	<p>Not reporting on this outcome</p>	<p>5. 4-H and Positive Youth Development</p>
56.	<p>Outcome 8 Number of youth that participate in science, engineering, and technology programs. (ASU)</p> <p>Activity Description</p>	<p>Issue Science, Technology, Engineering, and Math (STEM) are the wave of the future. Experts with the Pew Research Center credit technological innovation with almost half of United State economic growth over the past 50 years, and nearly all of the 30 fastest growing occupations in the next decade will require at least some background in STEM. The 4-H Science program mandates Extension to use math and science related activities to</p>	<p>5. 4-H and Positive Youth Development</p>

	<p>a. Science, Engineering, and Technology Camp (SET) b. National Science Day Changer Event</p>	<p>challenge young minds. 4-H Science programs encourage young people to pursue occupations in science and technology. Featured components of the program are robotics, rocketry, environmental science, computer science, agri-science, biotechnology, and veterinary science.</p> <p>Target Audience 4-H targets all Mississippians between the ages of 5 and 18 and volunteers. Other programs, activities, and events in this area target youth between the ages of 5 and 19, adult volunteers, and families.</p> <p>Response The 4-H Specialist and Educators conducted a four-day Science, Engineering, and Technology (SET) camp for elementary, middle, and high school students. Emerging technologies was the primary focus of the camp. Participants experimented with unmanned aerial systems platforms (UAS&P), robots, animal health and safety, farm and environmental safety, and growing Shiitake mushrooms. Additional activities conducted in 2019 included National Youth Science Day entitled “Game Changer” that focused on computer Science. Youth attending the 4-H science day activity learned to use computer science (CS) to create games, solve problems and engage with topics they’re passionate about.</p> <p>Results As a result of 500 youth participating in 4-H Science activities, 70% of the participants had a new interest in STEM fields and careers. Fifty percent of participants were less intimidated by science & technology and eagerly engaged in other events and activities. A week-long 4-H Science program at most major universities costs approximately \$500 per camper. The 500 youth participating in ASU's 4-H Science events and activities saved a shared total of \$35,500.</p> <p>External Factors No external factors affected the outcome results.</p>	
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<p>57.</p>	<p>Outcome 9 Number of youth that participate in career/workforce development program to prepare for the future. (ASU)</p> <p>Activity Description a. Career/Workforce Development Program b. Working Class Curriculum</p>	<p>Issue Most young people in Mississippi leave high school without sufficient job readiness skills to successfully transition from school to work. They usually don't understand or know about career opportunities. They are also unprepared for college or trade school. Most small communities do not have enough youth job opportunities which forces them work in other states. To successfully navigate these transitions, educational training is necessary to prevent communities from becoming drained of future workers, community leaders, and economic resources.</p> <p>Target Audience 4-H targets all Mississippians between the ages of 5 and 18 and volunteers. Other programs, activities, and events in this area target youth between the ages of 5 and 19, adult volunteers, and families.</p> <p>Response Alcorn State University Extension Program's Specialist and Educators conducted 45 workshops utilizing the career/workforce development program at schools statewide. Subject matter included performing job searches, completing manual and online applications, resume writing, appropriate workplace apparel, and interview techniques. The Working-Class curriculum was used for content delivery. Activities appealed to students' diverse learning styles. More than 5,297 direct and indirect contacts were made within this program.</p> <p>Results A total of 5,297 participants attended the career/workforce development program implemented by ASUEP. Pre and posttest surveys were administered to participants. Survey results indicated that 55% of participants understood delivered content; 49% stated they intended to set realistic future career goals; 67% agreed to use knowledge gained to identify and explore current employment opportunities, make informed decisions, and use job readiness skills to seek and secure a job.</p>	<p>5. 4-H and Positive Youth Development</p>
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		<p>External Factors No external factors affected the outcome results of this program.</p>	
<p>58.</p>	<p>Outcome 10 Increase the number that participates in Health & Wellness Program, events, and activities for limited-resource youth and families. (ASU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Cooking Classes b. Health & Wellness Workshops 	<p>Issue Young people in Mississippi, like most youth nationwide, do not consume adequate amounts of healthy foods. Working parents are often too busy to prepare healthy meals, forcing them to eat whatever is available. 4-H Healthy Habits and 4-H Food Smart Families are programs designed to teach children healthier eating habits and food preparation skills. Children who learn to prepare their own meals are more independent and are in control of the foods they consume. These habits are often carried into adulthood.</p> <p>Target Audience 4-H targets all Mississippians between the ages of 5 and 18 and volunteers. Other programs, activities, and events in this area target youth between the ages of 5 and 19, adult volunteers, and families.</p> <p>Response Alcorn State University Extension Program’s 4-H Youth Specialist, 4-H Youth Health Ambassadors, and volunteer leaders conducted seven three-day youth cooking classes, 70 Nutrition Health and Wellness educational programs, and 15 Physical Fitness activities. The cooking classes were premier activities for the 4-H Health and Wellness education workshops, events, and activities. Activities were conducted in Central, Southwest and Northern Mississippi counties. Youth learned the importance of (1) eating more fruits and vegetables; (2) drinking more water; (3) choosing healthier snacks; (4) eating breakfast; (5) preparing healthy meals on a budget; and (6) using food-safety principles to prepare and preserve foods.</p> <p>Results A total of 16,092 participants attended the cooking classes, workshops, and activities implemented by ASUEP. Participants retained knowledge and developed skills to prepare healthy, balanced meals. As a result, 77% of</p>	<p>5. 4-H and Positive Youth Development</p>

		<p>participants agreed to eat more fruits and vegetables; 72% vowed to drink more water and fewer sugary beverages; 69% said they would prepare and choose healthier snacks over calorie latent ones; and over 85% reported preparing meals at least 4 days per week for themselves and their families after attending the classes. Participants saved approximately \$350 each, resulting in a \$392,750 economic impact for Mississippi and limited-income families.</p> <p>External Factors No external factors affected the outcome results.</p>	
<p>59.</p>	<p>Outcome 1 Individuals and/or families increase their knowledge about health or child/family well-being. (MSU)</p> <p>Activity Description a. Workshops</p>	<p>Issue There are little to no education requirements for early care and education providers, with the exception of Head Start educators. This creates a disparity and concern for the quality of care provided to infants, toddlers, and pre-school aged children – the years a child develops the most. The state also requires early care and education providers to obtain 15 contact hours each year, but there are very few programs to provide this necessary service.</p> <p>Target Audience Early care and education providers</p> <p>Response In order to increase the quality of care and education for Mississippi’s most vulnerable population, MSU Extension Family and Consumer Science Agents were trained to deliver face-to-face trainings to early care and education providers. These trainings provided information and examples of developmentally appropriate practices targeted toward specific age groups (i.e., infant/toddler, preschool age).</p> <p>Results From October 2018 to September 2019, 147 early care and education providers completed 20 contact hours to enhance their knowledge of</p>	<p>6. Family and Consumer Sciences</p>

		<p>developmentally appropriate practices in the early care and education setting. A pre and post assessment was administered before and after each training to evaluate the knowledge gained by the early care and education providers who attended, and 92% of educators were shown to have an increase or stabilization in knowledge after trainings.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>60.</p>	<p>Outcome 2 Individuals and/or families report changes in behavior to improve health or child/family well-being. (MSU)</p> <p>Activity Description</p> <ul style="list-style-type: none"> a. Workshops b. Exhibits c. Newsletters d. Social Media Connections e. Health Fairs 	<p>Issue Sixteen percent of Mississippi’s houses have severe housing problems measured by overcrowding (approximately 1.5 person per room); expense (housing costs over 50% of household monthly income); incomplete plumbing facilities; or incomplete kitchen facilities according to the Department of Housing and Urban Development’s Comprehensive Housing Affordability Strategy survey. Poor housing conditions are linked to poor health outcomes. Addressing housing conditions is among the most important primary prevention strategies that MSU Extension can offer to its communities through its Healthy Homes Initiative (HHI).</p> <p>Target Audience Community-dwelling older adults, HUD housing residents, child care providers, foster care parents, nursing students, and disaster-affected residents</p> <p>Response MSU Extension Specialists train agents on HHI topics including indoor air quality, asthma and allergies, mold and mildew, carbon monoxide, lead, drinking water, home safety and accessibility, hazardous household products, and integrated pest management and on new teaching modes. During FY2019, 16 HHI team members- specialists, staff, and agents- reached 17,000+ community-dwelling older adults, HUD housing residents, child care providers, foster care parents, nursing students, and disaster-affected residents, through workshops, exhibits, newsletters, social media</p>	<p>6. Family and Consumer Sciences</p>

		<p>connections, and health fairs.</p> <p>Results 2,025 participants completed workshops, and 100% increased knowledge of healthy homes principles and intention to change behaviors related to indoor air quality, asthma and allergies, mold and moisture control, safety and accessibility, hazardous household products, lead poisoning prevention and pest management. Participants pledged to use less toxic household cleaners, use a HEPA vacuum cleaner, install carbon monoxide monitors, and not allow smoking indoors. These changes in housing environments reduce asthma risk and exacerbations, falls, and accidents at home related to lead poisoning and chemical ingestion which translates into fewer days of missed school for children, less missed worked for adults, and lower health care costs for families and a lower burden on the healthcare system.</p> <p>External Factors No external factors affected this outcome.</p>	
<p>61.</p>	<p>Outcome 3 Individuals and/or families report improved health or child/family well-being. (MSU)</p> <p>Activity Description a. Workshops</p>	<p>Issue The Mississippi Department of Health maintains and enforces a comprehensive set of regulations for Child Care Providers in Mississippi. These regulations require Food Manager’s Certification for licensed child care facilities. This certification requirement results in training for employees on specific food safety protocols and situations specific to child care centers. Child care centers are unique from other food establishments in that children are particularly susceptible to illness and the routine care of diapered children creates an added potential for increased risk.</p> <p>Target Audience Child care providers</p> <p>Response TummySafe© is pleased to be the primary food safety course used to fulfil this requirement in Mississippi. Diapering, breastmilk, formula and many</p>	<p>6. Family and Consumer Sciences</p>

		<p>other topics of specific interest to child care providers are discussed. The course is offered both online and in traditional classroom settings throughout Extension’s 82 county offices. Certification exams are proctored in all 82 counties as needed by Extension personnel. In addition to Certification, the Mississippi Department of Health (MSDH) also requires continuing education of child care providers. TummySafe can be completed for 6 contact hours.</p> <p>Results In 2019, 506 child care providers enrolled in TummySafe online, and five traditional face-to-face courses were taught through MSU Extension. Of the 506, 147 providers used the education for contact hours only. These are typically classroom child care providers. The remaining 359 took the certification exam in 2019, typically Directors or Cooks. TummySafe has an 80% pass rate despite the requirement of 80% or better on the exam for certification. Child Care providers are required by MSDH regulations to recertify every 5 years. Mississippi has approximately 1800 child care centers. With child care ratios at regulation levels and assuming an average distribution of teachers, this results in the protection of a conservative minimum estimate of 6,800 children from food borne illness in 2019 by TummySafe.</p> <p>External Factors No external factors affected this outcome.</p>	
62.	<p>Outcome 4 Number of clientele (limited access to fresh fruit and vegetables) that report increase in access to healthy food and vegetables as the main sources of their everyday diets. (ASU)</p> <p>Activity Description</p>	<p>Issue Two behavior changes that can help enhance the lives of older adults and improve their overall health and well-being are (1) eating at least 3 1/2 cups of fruits and vegetables every day (1 1/2 cups of fruit and 2 cups of vegetables), and (2) participating in at least 30 minutes of moderate-intensity physical activity most days. Eating a diet rich with fruits, vegetables, and physical exercise is very important for senior adults’ ages 60-74 years old. Fruits and vegetables provide important nutrients and fiber that help maintain good health. Seniors and other individuals who eat large</p>	6. Family and Consumer Sciences

	<p>a. Educational Classes</p>	<p>amounts of colorful fruits and vegetables may decrease the risk of developing diabetes; decrease the risk of heart disease, high blood pressure and some cancers. Adding 30 minutes of physical exercise most days to a diet rich with fruits and vegetables help older adults prevent or delay the effects of chronic disease, decrease mild stress, anxiety, and depression, build and maintain healthy bones, muscles, and joints, improve strength, increase balance to reduce the risk of falling, and improves sleeping ability.</p> <p>Target Audience At-risk youth age 5 to 19, adults, volunteers, limited-resource families, and limited-resource and socially disadvantaged communities</p> <p>Response Alcorn State University Extension Program’s Educators conducted 336 educational lessons in collaboration with organizations in Adams, Franklin, Jefferson and Wilkinson Counties to encourage older adults to eat more fruit and vegetables and get at least 30 minutes of physical activity most days. ASUEP’s goal was to educate and empower health challenged individuals to learn and try different, effective health and wellness practices, and approaches that allowed them to enhance their lives and improve their overall health and well-being. The following series of lessons were taught: Fruit and Vegetable, Consumption, Physical Activity, Benefits of Eating a Diet Rich with Fruits/Vegetables, and Getting 30 Minutes of Physical Activity Most Days.</p> <p>Results A total of 81,848 people participated in ASUEP Nutrition, Health and Wellness programming. Participants from Adams, Franklin, Jefferson and Wilkinson Counties were evaluated. Results indicated that 75% of participants had a general knowledge about fruit and vegetable consumption and getting physical activity 30 minutes most days; and 25% of participants had little to no knowledge of the subjects. Educators noted that there were only a few local places to buy quality, fresh fruit and vegetables.</p>	
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		<p>Many of these counties are considered food deserts. Two counties have local small physical fitness centers that are rarely used.</p> <p>External Factors No external factors affected the outcome results of the educational lessons implemented.</p>	
63.	<p>Outcome 5 Number of clientele (limited access to exercise equipment and facilities) that report positive changes in physical activity, decreased caloric intake, and behavior changes connected to adoption of new recommendations on how to prepare healthier meals. (ASU)</p>	Not reporting on this outcome	6. Family and Consumer Sciences
64.	<p>Outcome 6 Number of limited-resource families and youth that report using better healthy eating practices and increased physical activity to manage obesity, weight, and health-related diseases. (ASU)</p>	Not reporting on this outcome	6. Family and Consumer Sciences
65.	<p>Outcome 7 Percentage of participants that utilized knowledge gained and made adjustments in their nutrition and lifestyle behaviors. (ASU)</p>	Not reporting on this outcome	6. Family and Consumer Sciences

<p>66.</p>	<p>Outcome 8 Number of limited-resource participants that demonstrate the adoption of effective parenting practices to improve parent/child relationships. (ASU)</p> <p>Activity Description</p> <p>a. Active Parenting Curriculum educational classes</p>	<p>Issue Parenting may come naturally for some; others need additional support and guidance to understand child development, to respond appropriately to their child’s needs, and to cope with the challenges of parenting. Parent education provides participants with knowledge, resources, and support to develop parenting skills to enhance child and family well-being. It can also help parents or caregivers learn the tools and strategies to provide a positive and nurturing home environment where their children will thrive physically, emotionally, and cognitively. Teaching parents basic parenting skills can be a great way to foster family support and family well-being. Family well-being occurs when all family members are safe, and healthy. When youth are coached and instructed on life skills, they can learn important lessons that at necessary for with others and their families. Engaging families as active participants in problem-solving and goal setting can help them identify and use their own strengths to address the challenges they face. When families are healthy, safe, and economically stable, their children's health and well-being can thrive.</p> <p>Target Audience At-risk youth age 5 to 19, adults, volunteers, limited-resource families, and limited-resource and socially disadvantaged communities.</p> <p>Response Alcorn State University Extension Program’s Educators collaborated with organizations in Adams, Franklin, Jefferson and Wilkinson Counties and conducted 19 activities. Parents were trained to use basic life skills practiced to enhance their lives and the lives of their families. Educators used the Active Parenting Curriculum that contained a series of six lessons. The Active Parenting. Question/Answer observations, worksheets, role play and check-list observations were used to assess knowledge gained. Educators taught lessons on the following topics: Understanding Nonverbal Messages; Making Decisions- Big and Small, Managing Personal Resources. Resolving Conflicts; and Looking to The Future. Observations and evaluation</p>	<p>6. Family and Consumer Sciences</p>
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		<p>data were recorded and are provided below.</p> <p>Results ASUEP implementation of the Active Parenting Program total participants was 1,229. The participants were observed and evaluations. There was 100% participation from all participants in a related activity (Role-play). Participants were asked questions and gave examples on each topic covered. Educators observed that all participants believed that having life skills is an essential part of being able to meet the challenges of everyday life. The participants relayed that having basic life skills will help them to find new ways to problem solve, understand their actions, take responsibility for their actions, and develop a better sense of self-awareness.</p> <p>External Factors No external factors affected the outcome results of this program.</p>	
<p>67.</p>	<p>Outcome 9 Number of limited-resource families and youth that report using learned skills to analyze their financial well-being and make effective financial management decisions. (ASU)</p> <p>Activity Description a. Money Smart Curriculum educational classes</p>	<p>Issue More than half of Americans report living paycheck-to-paycheck and experiencing financial crisis because of inadequate savings, too much debt, and poor planning. Alcorn State University Extension Program works with community partners to help people acquire the knowledge, skills, and motivation they need to build financial security. We believe Financial Security is the cornerstone of prosperous communities, nurturing neighborhoods, and strong families. Financial literacy and education can be more effective when they help people develop skills in knowing how to achieve specific goals, rather than transmitting knowledge of particular facts about financial products and services. Effective financial literacy approaches are structured to help consumers: (a) know when and how to locate information for making financial decisions; (b) understand how to interpret information for decision-making; and (c) have skills and confidence to act and implement their decision.</p> <p>Target Audience</p>	<p>6. Family and Consumer Sciences</p>

		<p>At-risk youth age 5 to 19, adults, volunteers, limited-resource families, and limited-resource and socially disadvantaged communities.</p> <p>Response ASUEP Educators implemented 18 activities in collaboration with organizations in Adams, Franklin, Jefferson and Wilkinson Counties, to teach Financial Management skills using the Money Smart Curriculum. Working with this group centered on educating and empowering financially challenged individuals to learn and try different, effective financial management techniques, practices, and approaches that would generate financial stability and place families on a path to financial freedom. The following series of lessons were taught: Financial Well-being; Budgeting; and Parenting. In addition, the participants were assessed with a financial well-being questioner to assess their current financial well-being. The assessment was conducted during each activity. The assessment allowed participants to see how well their current money situation is providing there with financial security and freedom of choice.</p> <p>Results A total of 1,211 participants attended the Money Smart Curriculum classes implemented by ASUEP. As a result of the Money Smart Curriculum implementation, Educators reported all participants scored above the national average of 54. Seven groups scored 67, high financial well-being range. This indicated that most people in these groups could come up with \$2,000 for an emergency, can always stay on budget, and very few have experienced a credit rejection or are concerned about credit rejection. Fifty percent (50%) of groups scored very high according to the financial well-being score range (73, 76, 78, 85). This range indicated that these participants could have high levels of savings or more in liquid savings, make automated deposits into a savings or retirement account, and have health insurance. The remaining groups had a medium high financial well-being score range (55, 55, 67). Participants in this range are assumed to have automated deposits into a savings or retirement account, always pay</p>	
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		<p>off credit card debts, and sometimes or often experience food insecurity or hardship.</p> <p>External Factors No external factors affected the outcome results of this program.</p>	
68.	<p>Outcome 10 Number of new technologies developed that enhance food safety and nutritional quality. (ASU)</p>	<p>Not reporting on this outcome</p>	<p>6. Family and Consumer Sciences</p>