

2015 Alcorn State University and Mississippi State University Combined Research and Extension Plan of Work

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I. Plan Overview

1. Brief Summary about Plan Of Work

This plan of work is the first joint plan of work (POW) between 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). The plan therefore includes Extension and research from Mississippi's 1862 land-grant institution, Mississippi State University, and its 1890 land-grant institution, Alcorn State University.

Mississippi is a diverse state, with a variety of agricultural systems, a large population of ethnic minorities, and families and communities with unique needs. The land-grant universities meet this challenge with a broad spectrum of programming designed to reach these diverse audiences. Creation and transfer of knowledge to solve problems are at the core of these efforts.

MSU Extension provides research-based educational programs and information in agriculture and natural resources, 4-H youth development, family and consumer education, and community resource development to improve the economic, social, and cultural well-being of all Mississippians.

The mission of MAFES is the creation of knowledge through fundamental and applied research in the fields of science related to agriculture, food, natural resources, the natural environment, people, and communities. The focus of these research programs is on enhancing and/or developing economically efficient and environmentally acceptable agricultural production and processing systems. The goals are to provide safe, nutritious, desirable food and fiber products and processes for consumers, as well as to assure that the businesses which comprise Mississippi's agricultural industry have the information required to remain competitive in a global marketplace.

Mississippi State University's (MSU) program areas reflect the integration of the agricultural sector in Mississippi and provide needed programming for the youth, families, and communities of the state. MSU's ten program areas include the following:

1. Global Food Security and Hunger - Animal Systems
2. Global Food Security and Hunger - Plant Systems
3. Global Food Security and Hunger - Agricultural, Biological, and Natural Resources Engineering
4. Global Food Security and Hunger - Enterprise Economics
5. Environmental Systems and Sustainability
6. Forestry
7. Wildlife and Fisheries
8. Community Resource and Economic Development
9. 4-H/Youth Development
10. Family and Consumer Sciences

The Joint Plan of Work (POW) of Alcorn State University School of Agriculture, Research, Extension, and Applied Sciences (AREAS) draws upon the organization's unique strengths and its comprehensive delivery system in conducting original research and delivering educational programs targeted to limited-resource audiences. Research and Extension professionals facilitate positive change in the Capital River,

Delta, and Coastal regions of Mississippi through implementing the joint planned programs.

ASU state-level Extension and research staff consists of researchers who conduct studies to address relevant issues and situations facing the state's limited-resource citizens, as well as issues relevant to specific geographic areas of the state. Extension specialists draw upon research-based information to design, develop, and implement educational programs that deliver new knowledge to limited-resource audiences across the state. At the county level, Extension Program Area staff design and implement educational programs, events, and activities that make it possible for limited-resource audiences to obtain and apply new research-based information and gain new skills. Many of the research and education programs are tested and supported by the Model Farm on the ASU campus, two off-campus demonstration centers located in Mound Bayou and Preston, and the Natchez Farmers Market located in Natchez, MS.

ASU's five program areas include the following:

1. Global Food Security and Hunger (Animal Systems and Plant Systems);
2. Small Family Farm and Marketing (Enterprise Economics);
3. Community Resource and Economic Development;
4. 4-H and Youth Development: Family, Nutrition, Health, Fitness, and Wellness; and
5. Family and Consumer Science: Nutrition, Food Safety, and Human Health and Well-Being.

These planned programs represent those areas with the greatest need as identified by community partnerships, environmental scans, researchers, and Extension staff. Stakeholder input from limited-resource audiences in the Delta, Coastal, and Capital River targeted regions of Mississippi focused around these five program areas.

Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2015	245.0	36.0	61.0	38.0
2016	245.0	36.0	61.0	36.0
2017	245.0	36.0	61.0	36.0
2018	245.0	36.0	61.0	34.0
2019	245.0	36.0	61.0	34.0

II. Merit Review Process

1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

- Internal University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel

- Expert Peer Review

2. Brief Explanation

At MSU, research projects utilize both an internal university panel and an expert peer review as part of the regional research networks. These reviews cover all aspects of research project proposals, including scientific merit, budgets, and suitability of the research mission for the unit, experiment station, and regional consortium. Extension programs undergo an internal university panel review. This review takes into consideration the need for the program (including stakeholder input), the methods utilized, the audience identified, and the methods for outcome/impact evaluation. The 5-Year Plan of Work is reviewed by a combined internal and external university and external non-university panel. Panels are set up as appropriate for specific program plans with a focus on a broader review of the need, resources allocated, and expected outcomes of the programs.

At ASU, a panel consisting of individuals from within the university, other universities, and external non-university groups is selected every two years to establish and conduct merit review process of the Joint Extension/Research POW. The individuals selected include Extension program leaders, specialists, and researchers from land-grant universities within and outside of the state of Mississippi. The non-university panel members include various partnering agencies with complementary research and Extension functions and priorities in the state. The merit review process focuses on the five planned programs identified above.

Every other year at ASU, and for the next five years, a comprehensive program review is/will be conducted by the panel of the AREAS. Input to this review process is obtained from local and state stakeholders during an environmental scanning process, feedback from county advisory groups, and contributions from university faculty in the respective areas of the plan. The review results are used to improve, change, and modify the Plan of Work.

ASU's research efforts are reviewed annually to evaluate the relevancy of research priorities, the quality of the research methodology, project outputs, and the measured impact of research projects. External expert reviewers and peer reviews from governmental agencies (state and federal), other universities, and local officials are also included in the review of the POW research conducted during the relevant reporting period.

III. Evaluation of Multis & Joint Activities

1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

Once the draft guidelines for AREERA were published in 1998, MSU initiated a revised program planning process. Each program plan in this Plan of Work reflects a group planning effort, including both research and Extension where both are involved in the program. To provide guidance for the program planning process, the planning groups not only used their professional expertise, but also information at their disposal from the following sources:

- The stakeholder input process described in this document, including county and program advisory councils, state-level program advisory councils, Research and Extension Center advisory meetings, key partners, and other sources;

- Outreach council meetings for research and Extension;
- County-level program delivery agreements developed by each local Extension agent; and
- Professional peer review of the draft plans of work.

ASU's proposed planned programs will address the strategic issues identified by the stakeholders by achieving goals in response to high priority issues in each of the five planned programs.

2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

One of the most important challenges to research and Extension educators is to continuously improve our capability to stay relevant and ready to help Mississippi residents help themselves with educational programs that adjust to the state's demographics changes and, migration patterns, including the changing needs of the under-served and under-represented.

Needs of all MSU clientele groups, including under-served and under-represented groups, were determined through the stakeholder input process described elsewhere in this Plan. Most of the advisory groups mentioned in the stakeholder input process are required to be representative of all potential clientele. MSU Extension also has specific procedures in place, such as "grassroots mailing lists," to reach all potential clientele, especially those in under-served and under-represented populations. In 2014, MSU Extension conducted a formal needs assessment with a random sample of Mississippi citizens, all Extension local advisory boards, and Extension faculty and staff. In addition to this input, the outreach council conducts a series of meetings around the state. These meetings are designed specifically to obtain input from under-served and under-represented populations.

While MSU Research and Extension focus on all citizens of the state of Mississippi, there are several programs which are specifically designed to reach underrepresented clientele. One example is The Nurturing Homes Initiative which provides educational information, training and technical assistance to family home-care providers who offer full-day, full-year childcare services to children of families meeting certain income requirements. Another example is in offering Forestry Management and Urban Tree Planting workshops in areas and schools with predominately low income minority participants. Yet another example is in offering the "Conozca Sus Arboles" ("Know Your Trees") publication in Spanish, which won 2012 awards for best publication and best innovative program from the Association of Natural Resource Extension Professionals and best publication from Southern Regional Extension Forestry.

Alcorn Extension's mission is to improve the quality of life of "limited-resource" audiences through education during a time of dynamic change. Thus, stakeholder input is obtained through an environmental scanning process, comprehensive community assessments, feedback from county advisory groups, and input from university faculty to guide research and Extension planning, implementation, and evaluation.

A brief annotated list of key AREAS' research and Extension programs and difference initiatives that we plan to maintain and/or enhance while addressing the needs of under-served and under-represented populations include:

- The Small Farm Development Center provides farm loans to limited-resource farmers who otherwise would not have access to the capital needed to pursue alternative enterprises.
- The Mississippi River Research Center focuses on major concerns in the Southern

Mississippi River Valley of the United States. Its mission is to conduct research that will protect and enhance the region's water resources while sustaining agricultural production and income for farmers.

- At the Church Hill Swine Center in the southwestern region of the state, research is conducted on swine production and management. One goal of the Swine Development Center one is to generate information to enhance the socioeconomic well-being of rural communities.

- A new Extension initiative, the Health and Wellness Program, focuses on how to decrease the prevalence of obesity among adolescent and young children in Mississippi. The program's unintended impact is the development of leadership interventions that multiplies Extension's volunteer capacity of communities across our service areas and helps people work on their own behalf to promote physical activity and healthier eating habits.

3. How will the planned programs describe the expected outcomes and impacts?

Both MSU and ASU outline expected outputs and outcomes/impacts using a logic model format. At MSU, each planning group has developed one or more program plans using the logic model with most outcomes identified in the intermediate- or long-term category. At ASU, short-term outcomes are described in terms of the expected knowledge to be gained and increased awareness of information related to key issues of the five planned programs of the POW being experienced by limited-resource audiences. The mid-term outcomes will focus on the development, adoption and use of information related to key issues facing limited-resource citizens. Finally, the long-term outcomes of the five planned programs are described through the documentation of changes; increases and decreases observed regarding key issues affected by limited-resource audiences (i.e., changes in knowledge, skill development, visible and measured changes in behavior, policy development and changes in situation or problems).

MSU and ASU will work to develop new logic models that combine our various programs. Our aim is to measure and report on the differences we are making as a result of our efforts.

4. How will the planned programs result in improved program effectiveness and/or

Our planned programs are inclusive because they ensure that diverse viewpoints are taken into account by seeking input from all of those involved with and affected by the evaluation, such as volunteers, local advisory councils, educators, researchers, program staff, and community members. Taking the next step, improved program effectiveness and/or efficiency comes from thoughtful program planning and evaluation. One example each from MSU and ASU are provided below.

At MSU, the creation of program planning groups has provided a mechanism for researchers and Extension professionals to interact in the planning and implementation process. A required part of the joint plan of work is the sharing of information between the two "camps." The result has been the creation of numerous joint programs and enhanced interaction in all programming areas. Joint efforts range from one-day events to programs that have spanned over a decade. One example from MSU is the Row Crop Short Course. In 1983, MSU personnel developed the Cotton Short Course to provide the most up-to-date information possible to cotton producers throughout Mississippi. However, as agricultural cropping systems became more diversified over the past decade, the need to expand current educational programs to match this increased diversity became apparent. As a result, MSU personnel enhanced the Cotton Short Course into a Row Crop Short Course in 2009. Since that time, attendance and impact has increased each year. In 2013, approximately 492 people pre-registered for the Row Crop Short Course. Subject matter experts were brought in from six states in addition to Mississippi to provide educational information. These experts covered

all aspects of row crop production, allowing anyone who attended the Row Crop Short Course to get solutions to problems they face. Although it is difficult to quantify, a conservative estimate of the value of the Row Crop Short Course could be placed at \$35 million. In addition to the monetary value placed on the Row Crop Short Course, it has proven to be one of the flagship meetings conducted by MSU Extension each year. Attendees document a very high level of satisfaction with the quality of speakers, information presented, and additional amenities provided during the Row Crop Short Course.

A well-planned program with a carefully executed evaluation is essential for benefitting stakeholders. ASUEP developed a Planned Change Model during the last four years to help ensure that program goals are measurable and appropriate information is collected. This Model for Planned Change is a 15-component, fully tested process that, when implemented with fidelity, produces desired outcomes for ASUEP and for consumers at the individual, family, and community levels. Benefits include better understanding of target audiences' needs and ways to meet those needs, objectives that are more achievable and measurable, progress toward objectives that is monitored more effectively and efficiently, and increased program productivity and effectiveness.

IV. Stakeholder Input

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

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Survey of traditional stakeholder groups
- Survey of the general public
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals
- Other (Establish a statewide Extension Advisory Council)

Brief explanation.

At MSU, multiple methods are used to determine issues to be addressed by Extension and/or research programs. Extension has an Overall Extension Advisory Council in each county comprised of individuals from business, social, and economic entities and those who represent needs of under-served and under-represented clients. Program and/or commodity advisory groups act as subcommittees of each Overall Council and represent agriculture, family and consumer sciences, 4-H youth, and community/rural development. All advisory councils meet at least twice per year.

MSU Extension Agents obtain information on client needs from key community leaders and representatives of under-served populations. These groups meet several times per year in various settings to offer input and react to Extension's efforts. MSU also implemented a formal statewide needs-assessment survey in 2014.

MSU has four area Research and Extension Centers jointly administered by Extension and MAFES. Each has an overall advisory council where stakeholders discuss programming and research efforts and assess needs at a yearly meeting. Subgroups may meet several times during the year to discuss specific needs.

Throughout the year, MSU Extension and MAFES discuss efforts and results, coordinate activities, and set priorities with key partners (e.g., MS Farm Bureau; Natural Resources Conservation Service; Delta Council; Rural Development Offices; MS Forestry Commission; MS Department of Wildlife, Fisheries, and Parks; MS Department of Agriculture and Commerce; and state and regional commodity groups).

At ASU, local and regional print, broadcast, and interactive media will increase access to limited-resource clients. Extension publications will be targeted to traditional and non-traditional stakeholders, elected and government officials, and local organizations to seek diverse stakeholders. To seek stakeholder input and encourage participation, the Media and Communications Unit will publicize and market research efforts, educational programs, and events conducted at state and county levels. One-on-one contact with target audiences will be conducted through surveys at different yearly events.

Data from ASU client surveys will be used to design research projects and educational programs. Some projects conduct experiments on farmers' land and provide farmers a chance to participate in the research. This "participatory research approach" increases the time spent serving limited-resource audiences, increases the diversity of perspectives that inform ASU researchers and Extension staff, and enhances community members' understanding of concepts and better practices.

ASU Extension is working to establish a statewide Advisory Council that functions as the "eyes and ears" of ASU Extension in the state. ASU will continue to form local planning committees in each county to recruit, plan, and implement town hall meetings and focus groups sessions, and complete environmental scans.

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

1. Method to identify individuals and groups

- Use Advisory Committees
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief explanation.

As described in a previous section, the collection of input from stakeholders is an ongoing process. Multiple approaches are used by MSU and ASU to seek stakeholder input. At MSU, stakeholder input is representative of all Mississippi residents, while at ASU, efforts are made to ensure that the stakeholders involved are representatives of limited-resource households in terms of geographic location, family status, income level, age, gender, disability status, and users or non-users of existing educational programs. Specific examples of these approaches follow.

Guideline manuals were designed for collecting data from stakeholders to accomplish the program priorities at ASU. The manuals were used to train ASU Extension county and campus-based educators and staff on how to conduct public surveys, meetings, collect data

and summarize the issues for future action plans. The materials were also used with county government oversight committees and advisory committees to help them better understand the importance of seeking a broad base of stakeholder input at the community level.

Both MSU and ASU rely on Extension Advisory councils/committees to assist in gathering information about the needs and issues in local counties. These advisory groups are required to be reflective of the population of potential clientele. ASU also has a Research Advisory committee comprised of researchers from USDA and state agencies, business representation and commodity groups.

At MSU, listening sessions are sometimes held for the general public; others are specifically designed to reach under-served populations. ASU implemented a Town Hall meeting to identify issues or needs of limited-resource citizens in counties targeting the general public. Information from the analysis of the issues facilitates programming and research efforts through an action-based team response to the critical issue identified from the analysis. ASU will also implement a series of focus groups sessions to further prioritize the issues identified in the public meetings.

Specific needs assessments are conducted when warranted, such as for the development of a new program or when an issue emerges. MSU implemented a statewide telephone-based needs assessment survey with the general public, using the Extension national brand survey as a starting place to identify topics and programs of interest. An electronic survey was distributed to all county Extension advisory group members (overall council and programmatic councils), as well as regional, and statewide councils, to stakeholder groups, and to Extension faculty and staff. Data collected during this survey will be used to guide and develop statewide priorities in program areas identified.

ASU utilizes the Individual Client Service Plan (ICSP) -- an individual or family need assessment to collect information on relevant needs and issues of limited-resource clientele to enable researchers, Extension specialists, and county staff to provide educational programs, information and activities, and appropriate technical assistance.

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

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public

Brief explanation.

Meetings with traditional stakeholder groups, the general public, and specifically with non-traditional groups are an ongoing part of the needs assessment process conducted by MSU Extension and MAFES. These were described at the beginning of this section. As

mentioned, MSU conducted a statewide needs-assessment survey in 2014, using the Extension national brand survey as a starting place to identify topics and programs of interest. Targeted participants included all county Extension advisory group members (overall council and programmatic councils), regional and statewide councils, stakeholder groups, and the general public. Data collected during this survey are being used to guide and develop statewide priorities in program areas identified.

ASU's Town Hall Meetings are designed to collect data on the needs and strengths of limited-resource communities in our serving regions. The meetings are planned to facilitate the gathering of pertinent information that would assist ASU Extension in identifying the critical needs/issues of limited-resource communities. The role of the program is to listen and support an open democratic discussion of expressed and felt needs, issues, and perspectives.

ASU Extension developed the Individual Client Service Plan (ICSP), which is also used to collect additional feedback from individuals. After collecting and analyzing group and individual input the program administrators, specialists, and researchers establish community priorities, identify resources necessary to implement action steps and focus on educational ICSP activities to outcomes. We expect the Extension Advisory Council to provide useful information on the Extension education process.

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

Brief explanation.

At MSU, stakeholder input influences most aspects of this POW. Issues are identified through the needs assessment process discussed earlier. The issues help Extension Agents and Specialists determine their plans of action, including redirecting programs to meet clientele needs. Administration must provide the resources to accomplish these changes, including setting new priorities or revising existing priorities, and hiring appropriate staff members as required to address the priorities.

At ASU, budget allocation, identification of emerging issues, redirection of research and outreach programs, selection of staff, action plans, and priority setting are directly connected to the ASU mission. The mission is the foundation of our planned change model (discussed earlier), which consist of planning, implementing, evaluating and maintaining accountability measures. A statewide advisory council, program areas, environmental scan, Town Hall meetings, individual survey findings, research results and merit reviews support our decision making process to establish clear budget priorities and action plans that satisfy our educational mission. When possible, budget changes are made to allocate the necessary resources and staff to address program priorities. It is also critical that we conduct internal assessment and monitor our talent

capacity to deliver on our priority. Recently, the Program and Organizational Development System (PODS) of ASU Extension was established for that reason. This unit will identify competencies as well as focus attention on the development of knowledge and skills in our organization. An organizational assessment of our research and Extension's capacity to reach a diverse public and to deliver educational programs relevant to different cultural groups in the state, for example, reveals that the organization needs to design and implement measurable strategies to reach desirable competence. That will become one of the critical priorities this year.

Finally, the state and county staff and ASU Extension Leadership and Management Committee together prioritized the emerging issues and ASU's immediate focus. Prioritization of issues in program areas: (a) agriculture/environment issues are lack of farm financial management, limited knowledge of production, management, and marketing practices for alternative enterprises; (b) nutrition and health issues are high rate of obesity (adult/childhood) and high incidence of chronic disease; (c) youth development issues are high incidence of risky behavior and high rates of teen pregnancy across the state; (d) child and family development issues are high rate of single parent families and limited parenting skills among limited resource parents; and (e) community and economic development issues are lack of jobs (for youth and for adult) and limited community leadership skills.

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Global Food Security and Hunger - Animal Systems
2	Global Food Security and Hunger - Plant Systems
3	Global Food Security and Hunger - Agricultural, Biological, and Natural Resources Engineering
4	Global Food Security and Hunger - Enterprise Economics
5	Environmental Systems and Sustainability
6	Forestry
7	Wildlife and Fisheries
8	Community Resource and Economic Development
9	4-H and Youth Development
10	Family and Consumer Sciences

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Global Food Security and Hunger - Animal Systems

2. Brief summary about Planned Program

This program addresses research and Extension programming designed to enhance the animal production process, with a focus on helping beef, dairy, equine, swine, aquaculture, and poultry producers and respective industry personnel. Best practices are developed, identified, and promoted to help resolve the problems of hunger and food insecurity. Partnerships among researchers in multiple university departments explore strategies to strengthen the capacity of communities to access to sufficient, safe, and nutritious food to meet the needs of people and improve their quality of life. The program consolidates and complements food policy by engaging allied disciplines in identifying ideas and strategies that can be of long-term benefit to communities.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	10%	17%	9%	18%
302	Nutrient Utilization in Animals	10%	17%	30%	10%
303	Genetic Improvement of Animals	5%	8%	2%	9%
304	Animal Genome	5%	0%	10%	0%
305	Animal Physiological Processes	5%	0%	13%	0%
306	Environmental Stress in Animals	5%	0%	7%	0%
307	Animal Management Systems	15%	0%	18%	0%
308	Improved Animal Products (Before Harvest)	5%	8%	1%	9%
311	Animal Diseases	10%	17%	6%	18%
312	External Parasites and Pests of Animals	5%	0%	0%	0%
313	Internal Parasites in Animals	5%	0%	0%	0%
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	5%	0%	2%	0%
315	Animal Welfare/Well-Being and Protection	10%	0%	2%	0%
402	Engineering Systems and Equipment	5%	0%	0%	0%
501	New and Improved Food Processing Technologies	0%	8%	0%	9%
602	Business Management, Finance, and Taxation	0%	8%	0%	9%
604	Marketing and Distribution Practices	0%	17%	0%	18%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)**1. Situation and priorities**

The animal production system in Mississippi is diverse, as are the needs of animal producers. There are 42,300 farms on approximately 11,200,000 acres in Mississippi. Almost 20,000 of these farms are involved in livestock production. Livestock and forage are produced in all 82 Mississippi counties.

Beef production is a significant component of Mississippi agriculture. The total value of cattle and calves production in Mississippi had an estimated production value of \$289 million, making it 6th among the state's agricultural commodities in 2013. Total cattle inventory in Mississippi in 2013 was 910,000 head. Beef cattle operations in Mississippi currently total around 17,752. In 2013, there were 100 Grade A

dairy herds scattered across the state. In 2013, milk production was estimated at \$40 million.

Mississippi's inventory of hogs and pigs was estimated at 415,000 head in 2013 with an estimated production value of \$144 million, down 41% from 2012.

Aquaculture production in Mississippi primarily consists of commercial pond-raised catfish with some limited production of freshwater prawns and crawfish. The catfish industry has generally been a profitable and rapidly expanding in the southeastern U.S. This was evident in 2013. Mississippi saw an estimated 7.9% increase in estimated production value -- \$178 million in 2013. This was the first significant increase in catfish production that had been seen since 2002. This increase came despite losses from infectious and environmental diseases being amplified in the past decade. Solutions to these problems are complex and multi-faceted. Some further improvements in efficiency may be attained by improving management and culture techniques used in conventional earthen ponds. Improvements must also be made in fish health management and production efficiency or the future of commercial catfish farming will remain in jeopardy.

Poultry production is important to economies in many rural areas of the state. In 2013, approximately 736 million broilers were produced. As a \$2.70 billion industry (up 10% from 2012), poultry/eggs is the leading agricultural crop in the state. Air emission from poultry production facilities is currently and will continue to be an important issue for poultry producers. Moreover, measures to prevent disease, reduce animal stress, and improve animal welfare require constant improvement.

Estimated prevalence rates of food insecurity indicate that Mississippi has the highest rate, according to the Household Food Security in the United States in 2012. Many Mississippians have to choose between paying for food, utilities, and/or medical care. Many more residents have depended on emergency food programs across socioeconomically depressed counties in recent years. Limited-resource, small farmers often depend on growing alternative crops like fresh fruits and vegetables to satisfy market needs and increase income. However, many times because of the lack of knowledge on new and successful production and market practices, Mississippi small farmers are not able to maximize yield per acre, increase sales, or reach a better quality of life. Plant and livestock research scientists in the Department of Agriculture at ASU have identified constraints such as poor breeding systems and veterinary management, insufficient utilization of feedstuffs, and weakness of the marketing system.

Animal producers and industry continue to expand as consumers increasingly demand high quality, affordable products. They rely heavily on Extension and research personnel to aid them in increasing production and ensuring the health of their animals. This program will address industry needs through basic and applied research, technology transfer through the Extension system, as well as provide clinical diagnostic service and field investigation (aquaculture). For several of the animal production areas, a multidisciplinary approach will be needed.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Livestock producers must be provided with economic incentives to change management or production practices. Producers have many demands on their time. Educational programs must be designed to interest the producers to participate and convince them the information delivered is sound and economically viable. The use of multi-media technology in delivering programs can be useful in attracting producer participation. The producer must depart from the program with a sense that their participation was worthwhile.

In regard to aquaculture, the channel catfish is the most important aquaculture species in the U.S. Approximately 95% of channel catfish aquaculture occurs in four states (Mississippi, Alabama, Arkansas, and Louisiana) located in the southeastern U.S. Mississippi is by far the leading channel catfish producing state and accounts for more acreage than the other 3 states combined. Without substantial improvements in fish health management and production efficiency, the future of commercial catfish will remain in jeopardy.

In regard to poultry production, it is expected that new practices will be slow. As with any industry, the benefits and economic feasibility of new technologies must be proven before widespread adoption will occur.

Previous work with limited-resource farmers (livestock and alternative crop producers) has demonstrated a lack of awareness of management practices that can maximize their economic viability and sustainability. Thus, demonstrations of such production practices are needed with small farmers.

Ongoing collaboration among researchers, educators, consumers and programs is our competitive advantage in achieving common goals to generate solutions toward global food security and hunger. The planned program content and activities are within the experience and expertise of scientists and professionals at MSU and ASU. This program requires excellent participation of the research units, farmers/producers, industry, Extension educators, small farmer cooperatives and organizations, and community members to increase understanding of factors affecting global food security and hunger.

2. Ultimate goal(s) of this Program

The ultimate goals of this program are:

- To increase production efficiency in animal operations;
- To improve economic return for animal producers;
- To improve the profitability of livestock and poultry, and cash crop produced by limited-resource farmers;
- To improve the quality of meats through research and appropriate educational programs;
- To enhance income potential of limited-resource farmers through sustainable production of food and fiber;
- To develop community-based approaches to promote sustainable food production and overall security; and
- To enhance the overall development, growth, and improvement of the animal production systems in Mississippi.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890

Year	Extension		Research	
	1862	1890	1862	1890
2015	14.2	6.0	17.0	4.0
2016	14.2	6.0	17.0	4.0
2017	14.2	6.0	17.0	4.0
2018	14.2	6.0	17.0	4.0
2019	14.2	6.0	17.0	4.0

V(F). Planned Program (Activity)

1. Activity for the Program

This program will utilize a multidisciplinary team to explore issues related to global food security and hunger in an effort to find solutions that impact the community through research and educational programs. Extension personnel will communicate with animal producers, industry, and the general public through seminars, workshops, group meetings, and Extension bulletins and newsletters distributed in paper copy and electronically via the internet. Field demonstrations, farm tours, and one-to-one intervention may also be required to encourage acceptance of new practices and methodologies. Both basic and applied research will be conducted, with results of research projects being published in peer-reviewed scientific journals.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Group meetings and conferences) ● Other 2 (Curriculum development) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● eXtension web sites ● Web sites other than eXtension ● Other 1 (Reports and journal publications) ● Other 2 (Patents)

3. Description of targeted audience

At MSU, the target audience for this program includes animal producers and related industry personnel. Specifically, the target audience includes producers of beef, dairy, swine, equine, forage, catfish, crayfish, freshwater prawns, and commercial poultry.

At ASU, this program is designed specifically for the limited-resource farmers and residents within the State of Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income (0.80 of \$38,882 = \$31,105.60 per year). According to 2013 U.S. Census Bureau estimates, Mississippi had a median household income (2008-2012) of \$38,882.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of producers attending seminars, workshops, short courses, and demonstrations. (MSU)
- Conduct educational demonstrations for limited-resource farm families on best management practices and best available technologies for livestock production. (ASU)
- Conduct educational programs, activities, or events to improve herd genetics for limited-resource farm families. (ASU)
- Conduct educational programs, activities, or events on pastured livestock production practices for limited-resource farm families. (ASU)
- Conduct educational programs, activities, or events on reproduction performance, nutrient utilization in animals to decrease livestock production cost for limited-resource farm families. (ASU)
- Conduct educational programs, activities, or events on alternative livestock production practices for limited-resource farm families. (ASU)
- Develop research publications related to animal/meat production. (ASU)
- Develop research-based, reader-friendly pamphlets, and fact sheets on livestock production for Extension educators and farm families. (ASU)
- Develop M.S. thesis on animal production systems. (ASU)
- Conduct educational programs, activities, or events on forage production practices for limited-resource farm families. (ASU)

- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of producers adopting new technologies, strategies, or systems.
2	Number of producers increasing production levels.
3	Number of producers optimizing production inputs/expenses.
4	Number of producers improving their environmental stewardship.
5	Number of producers improving overall animal health and/or protection.
6	Number of program participants that improve livestock production efficiency through best management practices.
7	Number of producers that improve pasture grass fed to livestock.
8	Number of farmers that utilize artificial insemination and/or embryo transfer to decrease the need to purchase quality male animals and improve herd genetics.
9	Number of farmers that adopt pasture or alternative livestock systems as an alternative enterprise.
10	Number of new technologies, production practices, or improved production systems developed.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of producers increasing production levels.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of producers optimizing production inputs/expenses.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of producers improving their environmental stewardship.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 302 - Nutrient Utilization in Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Number of program participants that improve livestock production efficiency through best management practices.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals

- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 7

1. Outcome Target

Number of producers that improve pasture grass fed to livestock.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 308 - Improved Animal Products (Before Harvest)

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 8

1. Outcome Target

Number of farmers that utilize artificial insemination and/or embryo transfer to decrease the need to purchase quality male animals and improve herd genetics.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 303 - Genetic Improvement of Animals

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 9

1. Outcome Target

Number of farmers that adopt pasture or alternative livestock systems as an alternative enterprise.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 308 - Improved Animal Products (Before Harvest)

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 10

1. Outcome Target

Number of new technologies, production practices, or improved production systems developed.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Personnel availability)

Description

Agricultural enterprises operate in a complex and volatile environment, involving susceptibility to weather, which prevents or delays planting, as well as drought conditions that reduce yield and quality of the crop. Natural disasters such as drought and hurricanes can affect production. Public policy changes, especially those relating to comparative prices of inputs and harvested crops, may influence the impact of our interventions. If it is politically feasible to provide farmers a high price for their product while holding down input cost, farmers will be motivated to use the inputs as they accept the new technology. Government regulations, such as competitive land uses and environmental regulations, may affect producers' ability to make a profit on these enterprises. Prices for animal products are somewhat dependent on the local, state, and national economies. Additionally, shifting development patterns and global market influence may affect outcome. Changes in the population (immigration, new cultural groupings, etc.) can lead to producer/neighbor issues that influence choice of production practices. The ability or willingness of younger men and women to become involved in production agriculture will enhance productivity and profitability.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

At MSU, evaluation of this program will include retrospective producer surveys and case studies of selected producers. The time series analysis will include production data for selected animal production metrics in Mississippi. Additionally, a standardized evaluation has been developed that will be available for use at any Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. Evaluation results will be a combination of this quantitative and qualitative data.

At ASU, research will be evaluated according to its relevance to Mississippi and the nation. Output efforts will be a measure of the number of publications in journals and other delivery methods. In research, the extent to which findings will enhance scientific studies in other institutions will serve as another evaluation measure of efforts.

Other indicators of success and accomplishments of this planned program at ASU will be: (a) the number of communities and county officials showing interest in continue support for the project in consecutive years; (b) degree of improvement commitment and attitudes and experiences of the residents adopting change and new practices (are participation and outreach outcomes better than before?); (c) amount of additional financial support received and the number of cooperating organizations involved each year, over the life of the project; (d) participants involvement, comments and reflections on the relevance of the educational programs; and (e) peer reviews conducted on an

ongoing basis by researchers, sociologists, and Extension professionals within the Extension and academic communities. Effort will be made to ensure that peer reviews are done through area professional publications both internally and externally. The evaluation of the plan and best practices will be ongoing, and the assessment by stakeholders and clients will address final impact at the conclusion of the projects.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Global Food Security and Hunger - Plant Systems

2. Brief summary about Planned Program

This program includes research and Extension efforts related to the 3.7 million acres of row-crops produced in Mississippi each year. Primary crops grown include cotton, soybeans, corn, rice, wheat, grain sorghum, and peanuts. This program also includes activities focused on helping producers, manufacturers, suppliers, managers, homeowners, and consumers involved in the \$96 million horticulture industry in Mississippi, including vegetables and fruit production, turf, floriculture, and the ornamental nursery industries. Best practices are developed, identified, and promoted to help resolve the problems of hunger and food insecurity. Partnerships among researchers in multiple university departments explore strategies to strengthen the capacity of communities to access to sufficient, safe, and nutritious food to meet the needs of people and improve their quality of life. The program consolidates and complements food policy by engaging allied disciplines in identifying ideas and strategies that can be of long-term benefit to communities. Additionally, this program area will dedicate attention to sustainable energy and climate change, as related to plant production systems.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%	15%	0%	15%
111	Conservation and Efficient Use of Water	10%	0%	0%	0%
132	Weather and Climate	10%	0%	0%	0%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	8%	0%
202	Plant Genetic Resources	5%	0%	5%	0%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	10%	0%	4%	0%
204	Plant Product Quality and Utility (Preharvest)	0%	0%	9%	0%
205	Plant Management Systems	20%	25%	25%	20%
206	Basic Plant Biology	0%	0%	4%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	10%	8%	15%
212	Pathogens and Nematodes Affecting Plants	5%	0%	17%	0%
213	Weeds Affecting Plants	10%	10%	9%	10%
216	Integrated Pest Management Systems	0%	0%	11%	0%
403	Waste Disposal, Recycling, and Reuse	5%	0%	0%	0%
501	New and Improved Food Processing Technologies	0%	10%	0%	10%
601	Economics of Agricultural Production and Farm Management	5%	0%	0%	0%
604	Marketing and Distribution Practices	0%	10%	0%	10%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	0%	10%	0%	10%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%	10%	0%	10%
903	Communication, Education, and Information Delivery	5%	0%	0%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Mississippi farmers grow several agronomic crops, including soybeans, corn, cotton, rice, wheat, grain sorghum, and peanuts. These crops are grown on approximately 3.7 million acres, and their produce was estimated at \$2.5 billion in 2013. The impact of crops to the state's economy accounts for several times the actual commodity values, when considering the inputs utilized to grow, harvest, store, transport, process, market, and utilize them. Soybeans are currently the leading crop, planted on 2 million acres and produce a raw value of \$993 million; this is down 21% from 2012. MS growers produced \$631 million of corn on 815,000 acres in 2013, despite a 31% decrease in market value; \$331 million of cotton on 295,000 acres; \$141 million of rice on 130,000 acres; \$157 million of hay on 720,000 acres; \$69 million of sweet potatoes on 20,000 acres; \$126 million of wheat on 345,000 acres; \$23 million of peanuts on 33,000 acres; and \$12 million of grain sorghum.

The majority of MS farms are small family farms or family-owned businesses employing over 25,000 people. In the case of limited-resource small farmers, growing alternative crops such as fresh fruits and vegetables is seen as a way to satisfy market needs and increase income. However, due to lack of knowledge on new and successful production and market practices, small farmers are not able to maximize yield per acre or increase sales to reach a better quality of life.

Mississippi's horticulture industry is composed of producers, manufacturers, suppliers, managers, and consumers, and it encompasses vegetable and fruit production, turf, floriculture, and the ornamental nursery industries. As one indicator of the economic impact of the industry, MS spends over \$2.2 billion annually on installation and management of turf. In 2013, the value of production for horticulture crops, excluding sweet potatoes, produced by MS growers was \$115 million; this was a 19.8% increase over 2012.

Recent climate data indicate that higher variability and greater incidence of catastrophic weather must be seen as part of the situation. As this program area relates to sustainable energy, it is assumed that energy demand will continue to increase and that price will continue to fluctuate and rise.

To address these issues, several factors must be employed in research and Extension. These include the development of applicable and environmentally sound production and maintenance practices; selection and development of cultivars suitable under Mississippi's environmental conditions; research, development, and distribution of cultural recommendations; and, at the state level, the encouragement of economic development in this area. Producers, manufacturers, suppliers, and managers of horticultural products require a comprehensive research program, including the reduction of pesticide use via integrated pest management, nutrient management, cold hardiness, heat stress management, plant evaluations, plant growth regulation, propagation, water/irrigation management, and marketing. Information on cost analysis and financial management are critical to management decisions.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Research and Extension programs conduct open, unbiased, scientific research and provide expertise to clientele. Information on any subject is readily available in the business world today. However, most information available from industry is directed towards those entities making a profit. Thus, this information is naturally biased in their favor and has limited value to the public. Extension can provide unbiased information by assimilating scientific research conducted at universities based upon sound science, methodology, and subject to peer-review. Thus, universities provide timely, uniquely impartial data and ideas which clientele can use to make sound decisions to improve profitability and reduce risk.

Related to horticulture, we can assume that the growth in farmers' markets and opportunities for local and regional sales of horticultural specialty crops will continue to increase for Mississippi. The decentralization of fresh product purchases by large retailers offers opportunities for new and existing horticultural enterprises in the state. Traditional production systems will remain the center of most production, while non-traditional crops and production systems continue to serve niches and provide valuable opportunities for some enterprises. Home horticulture and recreational activities will continue to be an important part of horticulture in the state.

Markets and information needs for turf and landscape horticulture are steady or growing, with continued population and income growth, especially in the north and coastal areas of the state, driving much of this.

Producers will continue working smarter to increase profitability. Increased interest in marketing will continue to build a more market wise industry. Energy and labor efficiency will continue to be pressing issues. Changes in availability and labeling, along with continued interest in what is new, will lead to continued increases in the use of proprietary cultivars, crop production products, and equipment.

Previous work with limited-resource farmers (livestock and alternative crop producers) has demonstrated a lack of awareness of management practices that can maximize their operations for economic viability and sustainability. Thus, demonstrations of such production practices are needed with small farmers.

This program will assume research must recognize that while plants and animals can be more closely adapted to a changing climate, most production systems must be changed in parallel to recognize both climate change and organism change.

Ongoing collaboration among researchers, educators, consumers, and programs is our competitive advantage in achieving common goals to generate solutions toward global food security and hunger. The planned program content and activities are within the experience and expertise of scientists and professionals at MSU and ASU. This program requires excellent participation of the research units, farmers/producers, industry, Extension educators, small farmer cooperatives and organizations, and community members to increase understanding of factors affecting global food security and hunger.

2. Ultimate goal(s) of this Program

The ultimate goals of this program are:

- To increase or improve production stability, minimize input expenses, and enhance environmental stewardship. These goals will improve profitability and sustainability for agronomic crop producers;
- To increase the profitability, efficiency, and sustainability of horticultural activities, while strengthening horticulture's contributions and ties to our communities and our state;
- To improve the profitability of cash crop produced by limited-resource farmers;
- To enhance income potential of limited-resource farmers through sustainable production of food and fiber; and
- To develop an agricultural production system that is able to adapt to changing environments, sustain

economic vitality, and take advantage of opportunities offered by climate change mitigation technologies.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	38.5	15.0	25.0	7.0
2016	38.5	15.0	25.0	7.0
2017	38.5	15.0	25.0	7.0
2018	38.5	15.0	25.0	7.0
2019	38.5	15.0	25.0	7.0

V(F). Planned Program (Activity)

1. Activity for the Program

Activities will include:

- Short courses, workshops, or training seminars;
- Field consultations;
- Demonstration and verification programs;
- Newsletters and publications;
- Web-based information, social media, and e-mail;
- Distance learning programs;
- Field manuals or guides;
- Farm management software/components;
- Direct technical assistance/recommendations/interpretation/analysis;
- Information and fact sheets; and
- Curriculum development.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> • Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Curriculum development) 	<ul style="list-style-type: none"> • Public Service Announcement • Newsletters • eXtension web sites • Web sites other than eXtension • Other 1 (Reports and journal publications) • Other 2 (Patents)

3. Description of targeted audience

At MSU, target audiences include:

- Commercial and non-commercial producers
- Non-traditional crop producers (wildlife food plots, tourist farms, etc.),
- Agricultural consultants,
- Agricultural retail suppliers and dealers,
- Agricultural businesses and financial institutions,
- Agricultural industry representatives and research and development personnel,
- Agricultural applicators,
- Extension Service personnel, and
- Research faculty and personnel.

At ASU, this program is designed specifically for the limited-resource farmers and residents within the State of Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income (0.80 of \$38,882 = \$31,105.60 per year). According to 2013 U.S. Census Bureau estimates, Mississippi had a median household income (2008-2012) of \$38,882.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
 - Number of patents submitted
 - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of producers and/or clientele attending seminars, workshops, short courses, and demonstrations. (MSU)
- Develop research papers and publications on the findings of studies focusing on plant systems. (ASU)
- Conduct educational field days for limited-resource farm families on sustainable crop production practices. (ASU)
- Conduct educational programs on sustainable horticulture production practices to limited-resource farm families. (ASU)
- Develop educational fact sheets on sustainable horticulture production practices to limited-resource farm families. (ASU)
- Conduct research projects on sustainable crop production practices. (ASU)
- Conduct educational programs and demonstrations on alternative crop production. (ASU)
- Educate farmers on the importance of producing safe food through the use of Integrated Pest Management. (ASU)
- Educate farmers on the importance of producing safe food through the use of Good Agricultural Practices (GAP). (ASU)
- Demonstrate the use of Integrated Pest Management. (ASU)
- Conduct educational tours for limited-resource farm families on sustainable crop production practices. (ASU)
- Conduct educational programs and demonstrations on community and container gardening. (ASU)
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Documentation of producers increasing production or profitability levels.
2	Number of producers minimizing inputs/expenses based on practice change.
3	Documentation of efforts and activities which have improved environmental stewardship.
4	Number of producers adopting new practices, technologies, strategies, or systems based on research/Extension recommendations.
5	Number of program participants that adopt integrated nutrient management to increase crop production.
6	Number of program participants that utilize integrated pest management to improve the quality of vegetable production.
7	Number of producers that adopt new crop systems to improve crop yield and quality.
8	Number of participants that use recommended cultivar and other production practices to enhance productivity and profitability.
9	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.
10	Number of communities that establish community and container gardens to increase the availability of fresh and locally grown produce.
11	Number of farmers and vendors that gain knowledge on Direct Marketing of Alternative Agriculture Enterprises.
12	Number of participants that improve product handling and sanitation.
13	Number of new technologies, crop production practices, or improved crop production systems developed.

Outcome # 1

1. Outcome Target

Documentation of producers increasing production or profitability levels.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of producers minimizing inputs/expenses based on practice change.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Documentation of efforts and activities which have improved environmental stewardship.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of producers adopting new practices, technologies, strategies, or systems based on research/Extension recommendations.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 132 - Weather and Climate
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of program participants that adopt integrated nutrient management to increase crop production.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 6

1. Outcome Target

Number of program participants that utilize integrated pest management to improve the quality of vegetable production.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 7

1. Outcome Target

Number of producers that adopt new crop systems to improve crop yield and quality.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 8

1. Outcome Target

Number of participants that use recommended cultivar and other production practices to enhance productivity and profitability.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 501 - New and Improved Food Processing Technologies

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 9

1. Outcome Target

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.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 10

1. Outcome Target

Number of communities that establish community and container gardens to increase the availability of fresh and locally grown produce.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 213 - Weeds Affecting Plants

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 11

1. Outcome Target

Number of farmers and vendors that gain knowledge on Direct Marketing of Alternative Agriculture Enterprises.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 12

1. Outcome Target

Number of participants that improve product handling and sanitation.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 501 - New and Improved Food Processing Technologies

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 13

1. Outcome Target

Number of new technologies, crop production practices, or improved crop production systems developed.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Personnel availability)

Description

As this program is tied directly to agricultural production, weather extremes (hurricanes and drought) are the most likely external factor to affect outcomes. The next most likely factors to affect

outcomes are government regulations, especially environmental regulations, and public policy changes, primarily government set-asides and production programs. In regard to horticulture, total staffing and fiscal support for horticulture has declined over the past five years. Budget constraints have altered the delivery methods for Extension dissemination of information. Increased use of Internet, email, distance education, and other technologies has broadened communication avenues at the cost of interpersonal relationships between clientele and Extension personnel. Demographic shifts and population growth, hurricane damage, and increased disposable income have increased the demand for consumer information. The ability or willingness of younger men and women to become involved in production agriculture will also affect productivity and profitability. If it is politically feasible to provide farmers a high price for their product while holding down input cost, farmers will be motivated to use the inputs as they accept new technology.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

At MSU, evaluation of this program will include retrospective producer surveys and case studies of selected producers. The time series analysis will include production data for selected row-crops in Mississippi. Additionally, a standardized evaluation has been developed that will be available for use at any Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. The evaluation results will be a combination of this quantitative and qualitative data.

At ASU, the following comparison measures will be used to evaluate this planned program: a) crop performances under improved production practices to those produced under the conventional production practices, b) quality of crops produced and additional income to be generated by the farmers who adopted such resources/program, with those still using conventional production practices.

Research will be evaluated according to its relevance to Mississippi and the nation. Output efforts will be a measure of the number of publications in journals and other delivery methods. The main impact evaluation is the extent to which the farmers are switching to alternative crop production through sustainable agronomic production practices. In research, the extent to which findings will enhance scientific studies in other institutions will serve as another evaluation measure of efforts.

Other indicators of success and accomplishments of this planned program at ASU include: (a) the number of communities and county officials showing interest in continue support for the project in consecutive years; (b) degree of improvement commitment and attitudes and experiences of the residents adopting change and new practices (is participation and outreach outcomes better than before?); (c) amount of additional financial support received and the number of cooperating organizations involved each year, over the life of the project; (d) participants involvement, comments and reflections on the relevance of the educational programs; and (e) peer reviews conducted on an ongoing basis by researchers, sociologists and extension professionals within the extension and academic communities. Effort will be made to ensure that peer reviews are done through area professional publications both internally and externally. The evaluation of the plan and best practices will be ongoing and the assessment by stakeholders and clients will address final impact at the conclusion of the projects.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Global Food Security and Hunger - Agricultural, Biological, and Natural Resources Engineering

2. Brief summary about Planned Program

The Agricultural, Biological, and Natural Resources Engineering planned program through MSU is dedicated to the application of technical, business and management skills to problems in agricultural production, and commodity-related and natural resource management.

3. Program existence : New (One year or less)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	20%	0%	0%	0%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	10%	0%	0%	0%
306	Environmental Stress in Animals	5%	0%	0%	0%
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	5%	0%	0%	0%
401	Structures, Facilities, and General Purpose Farm Supplies	0%	0%	31%	0%
402	Engineering Systems and Equipment	50%	0%	54%	0%
403	Waste Disposal, Recycling, and Reuse	10%	0%	8%	0%
405	Drainage and Irrigation Systems and Facilities	0%	0%	7%	0%
	Total	100%	0%	100%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

This program area includes specialists from diverse disciplines at MSU, including Computer Science and Engineering, Geosciences, and Agriculture and Biological Engineering. The priorities of this program area are as follows: Engineering Systems for Crop Production, Engineering Systems for Animal Production, Waste Management, Irrigation and Water Resources Technologies, Renewable Fuels

Conversion Technology, and Biotechnology.

2. Scope of the Program

- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Improvements in resources engineering can result in safer, high-quality foods; more efficient and environmentally sound agricultural practices; and better educated and more economically capable communities.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to develop an agriculture production system that is able to adapt based on agricultural, biological, and natural resource engineering improvements.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	4.0	0.0	1.3	0.0
2016	4.0	0.0	1.3	0.0
2017	4.0	0.0	1.3	0.0
2018	4.0	0.0	1.3	0.0
2019	4.0	0.0	1.3	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

MSU research and outreach must not only adapt to engineering changes, but must improve efficiency under these new conditions by resource innovation.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods

<ul style="list-style-type: none">● Education Class● Workshop● Demonstrations	<ul style="list-style-type: none">● Newsletters● Web sites other than eXtension
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3. Description of targeted audience

Stakeholders and customers of research and Extension programs at MSU represent a broad section of audiences, including agricultural producers and consumers.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of people attending workshops, short courses, etc. (MSU)

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of producers adopting new practices, technologies, strategies, or systems due to research/Extension recommendations.
2	Number of producers increasing production levels.
3	Number of producers decreasing production inputs/expenses.
4	Number of producers improving their environmental stewardship.
5	Number of new technologies, practices, production systems developed that enhance production, profitability or environmental stewardship.

Outcome # 1

1. Outcome Target

Number of producers adopting new practices, technologies, strategies, or systems due to research/Extension recommendations.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of producers increasing production levels.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 402 - Engineering Systems and Equipment

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of producers decreasing production inputs/expenses.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 402 - Engineering Systems and Equipment

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of producers improving their environmental stewardship.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of new technologies, practices, production systems developed that enhance production, profitability or environmental stewardship.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Many potential factors may affect the implementation and success of this plan. Among these are changing political climates and priorities, changing internal policies and priorities, and potentially conflicting interests of stakeholders and consumers.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation of this MSU program will include retrospective producer surveys and case studies of selected producers. Additionally, a standardized evaluation has been developed that will be available for use at any MSU Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. The evaluation results will be a combination of this quantitative and qualitative data.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Global Food Security and Hunger - Enterprise Economics

2. Brief summary about Planned Program

At MSU, this program works on a broad level to help agricultural producers improve the profitability of their enterprise through management, marketing, and influencing farm policy. However, ASU specifically focuses on small family farm management and marketing by addressing financial management, analysis, and marketing in target counties with a high concentration of socially disadvantaged farmers/ranchers. The program collaborates with the Mississippi Small Farm Development Center, Farm Service Agency, Natural Resources Conservation Services, Rural Development, other federal and state agencies, and community-based organizations to provide technical assistance to socially disadvantaged farmers/ranchers in the following topics: (a) farm record keeping (manual and computerized), (b) financial analysis, (c) computer adoption, (d) marketing of agriculture and added-value, and (e) technical assistance in establishing farmers markets.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	0%	0%	3%	0%
502	New and Improved Food Products	0%	0%	8%	0%
503	Quality Maintenance in Storing and Marketing Food Products	0%	0%	7%	0%
511	New and Improved Non-Food Products and Processes	0%	0%	29%	0%
601	Economics of Agricultural Production and Farm Management	30%	30%	18%	0%
602	Business Management, Finance, and Taxation	10%	40%	6%	0%
603	Market Economics	0%	0%	8%	0%
604	Marketing and Distribution Practices	40%	30%	1%	0%
605	Natural Resource and Environmental Economics	0%	0%	14%	0%
608	Community Resource Planning and Development	0%	0%	1%	0%
609	Economic Theory and Methods	0%	0%	1%	0%
610	Domestic Policy Analysis	20%	0%	4%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Mississippi's farmers and agribusiness professionals operate in a competitive and rapidly changing environment. To thrive in this environment, they need access to timely information, tools to effectively evaluate that information, and the skills to recognize the need for and implement changes in the management of their operations.

A large number of small farms in Mississippi are very small and generate less than \$50,000 gross cash farm income (GCFI); approximately 37,500 small farms have annual gross farm revenue of \$50,000 or less. These small farms exist independently of the farm economy because their operators rely heavily on off-farm income. Financial performance varies among small farms, and many small farms are profitable will remain viable economic entities. Many small farmers farm for reasons other than profit and will remain in business as long as their farm losses are not unduly large.

Mississippi's agricultural producers and agribusiness professionals need timely and accurate information on developments in markets for their commodities. In addition, they need a better understanding of the marketing tools and opportunities that are available to them.

Changes in agricultural policy related to commodity production and natural resource conservation

have a tremendous impact on the economic well-being of Mississippi's agricultural producers, agribusinesses, and landowners. These stakeholders need access to the most current information and analysis related to proposed policy changes.

2. Scope of the Program

- In-State Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Producers that are proficient at production techniques are not necessarily proficient at the business aspects of farming. While production levels are important to farm viability, marketing, management, and knowledge of policy are also important components of successful enterprises.

Specifically for small and limited-resource and socially disadvantaged farmers, as assumption is that by providing technical assistance in financial management, small farmers' profit will increase and debt will decrease, thus improving their quality of live. A second assumption is that farmers adapt the best business management practices to increase their chances of getting a loan and other assistance from both federal and state agencies. A third assumption is that farmers/ranchers have a desire to improve their current situation, but lack satisfactory management skills. Therefore, this planned program aims at increasing knowledge of farm management, business management, finance, marketing, and distribution of farm products.

2. Ultimate goal(s) of this Program

In general, the program seeks to increase the profitability of farm enterprises so that operations are sustainable. However, ASU focuses specifically on enhancing the economic viability of small and limited-resource and socially disadvantaged farm families by strengthening their technical knowledge, skills, and economic decision making to fully contribute to the agricultural economy.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	4.0	4.0	6.5	0.0
2016	4.0	4.0	6.5	0.0
2017	4.0	4.0	6.5	0.0
2018	4.0	4.0	6.5	0.0
2019	4.0	4.0	6.5	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

At MSU, this program includes three areas designed to assist farmers in making their enterprises more profitable:

- The Farm Management Information and Training area provides farmers and agribusiness professionals with timely and relevant information on a variety of topics potentially impacting management decisions on their operations. It offers a number of practical decision aids along with training on the use of these aids as well as providing a resource for managers who need help with business planning.
- The Extension Agricultural Marketing Information and Education area provides producers of major row crops, cattle, milk and dairy products, catfish, fruits and vegetables, and horticultural crops with regular, timely updates on conditions in these commodity markets. In addition, training will be made available on the use of commonly used marketing tools and strategies.
- The Agricultural Policy Analysis and Education area provides producers, lenders and other input providers, and rural community leaders with timely and relevant information on existing farm, conservation, and international trade programs as well as analysis of the potential impact of proposed policy changes.

At ASU, educational programs cover the development of enterprise budgets, effective strategy models and how to measure results. Extension programs focus on presenting relevant content materials to address identified knowledge and skill needs of small farmers. Socially disadvantaged farmers in Mississippi receive training via small group meetings, one-on-one technical assistance, farm visits, field days, tours, certification sessions, demonstrations and conferences. Focus groups survey instruments will be developed to gather input and identify relevant farm management and marketing educational topics. ASU plans to conduct one small farmers conference per year; publications, presentations and workshops for farmers, marketing plan samples, agriculture tours of farms, and marketing tips and techniques sections will be featured at Alcorn Extension's Farmers Market.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> • Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Field days) • Other 2 (Conferences) 	<ul style="list-style-type: none"> • Public Service Announcement • Newsletters • eXtension web sites • Web sites other than eXtension • Other 1 (Field days) • Other 2 (Conferences)

3. Description of targeted audience

At MSU, the target audience for this program consists primarily of agricultural producers and related agribusiness personnel. ASU's target audience specifically includes limited-resource and socially disadvantaged farmers.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of producers attending workshops, seminars, and short courses. (MSU)
- Conduct educational sessions/demonstrations on farm record keeping. (ASU)
- Develop fact sheets on direct marketing of agriculture produce/product and value-added goods and services. (ASU)
- Conduct educational sessions on farm and financial management. (ASU)
- Conduct educational sessions on farm legal risk. (ASU)
- Conduct educational sessions to provide technical assistance on farm loans, other government agencies' requirements, and application processes. (ASU)
- Conduct educational tours on direct marketing of agricultural goods and services. (ASU)
- Conduct educational programs on the utilization of direct marketing techniques of agricultural goods and services. (ASU)
- Conduct educational programs and demonstrations on Direct Marketing of Alternative Agriculture. (ASU)
- Conduct special events at the Farmers Market to bring awareness to youth about eating healthier. (ASU)
- Conduct educational sessions on Farm Risk Management. (ASU)

- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of producers adopting recommended strategies in management, marketing, and government program use.
2	Number of producers indicating increased profitability due to implementation of recommended strategies.
3	Percentage of farmers and producers that gain knowledge on Farm and Financial Management.
4	Number of farmers and cooperatives that develop and utilize marketing plans.
5	Percentage of farmers and producers that keeps accurate records.
6	Percentage of farmers and producers that reports minimizing land and farm loss.
7	Percentage of farmers and producers that applies for farm loans.
8	Percentage of farmers and producers that demonstrates minimizing risk on the farm.
9	Number of farmers and vendors that report and demonstrate gained knowledge in Direct Marketing to Farmers Markets.
10	Number of farmers and vendors that report and demonstrate gained knowledge on Direct Marketing of Alternative Agriculture Enterprises.
11	Number of policies, decision support tools, and strategies developed that enhance profitability, inform production decision, and mitigate/manage risk.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices
- 610 - Domestic Policy Analysis

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Percentage of farmers and producers that gain knowledge on Farm and Financial Management.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 4

1. Outcome Target

Number of farmers and cooperatives that develop and utilize marketing plans.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 5

1. Outcome Target

Percentage of farmers and producers that keeps accurate records.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 6

1. Outcome Target

Percentage of farmers and producers that reports minimizing land and farm loss.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 7

1. Outcome Target

Percentage of farmers and producers that applies for farm loans.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 8

1. Outcome Target

Percentage of farmers and producers that demonstrates minimizing risk on the farm.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 9

1. Outcome Target

Number of farmers and vendors that report and demonstrate gained knowledge in Direct Marketing to Farmers Markets.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 10

1. Outcome Target

Number of farmers and vendors that report and demonstrate gained knowledge on Direct Marketing of Alternative Agriculture Enterprises.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 11

1. Outcome Target

Number of policies, decision support tools, and strategies developed that enhance profitability, inform production decision, and mitigate/manage risk.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 511 - New and Improved Non-Food Products and Processes
- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices
- 610 - Domestic Policy Analysis

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

As with most production-related programs, the success of this program can be influenced by many factors. Such factors include growth and availability of markets, agricultural policies, availability of USDA and state-funded programs, and weather and related natural disasters. The program is designed to help producers maintain their viability in spite of external factors, however.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

At MSU, retrospective studies will be used to determine adoption strategies and related impacts. Time series and case study analyses will be used to determine trends in marketing effectiveness. Additionally, a standardized evaluation has been developed that will be available for use at any Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. The evaluation results will be a combination of this quantitative and qualitative data.

ASU will evaluate this program using surveys, farm visits, interviews, and focus groups. Surveys will be used to determine if farmers and limited resource audiences have improved their farm management and marketing knowledge. Farm visits will determine if the farmers are adopting farm management and marketing practices. Interviews and focus groups will be conducted to determine if farmers and participants of our educational programs have gained knowledge and adopted in program area's topics. The farm visits. Interviews and focus groups will be conducted in different geographical areas of the state to compare different groups of farmers.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Environmental Systems and Sustainability

2. Brief summary about Planned Program

This MSU program focuses on water (quality, use, and conservation) as it relates to production agriculture, with an emphasis on irrigation efficiency, nutrient management, and proper disposal of agricultural wastes, including pesticides, solid wastes, and other waste products. Additionally, this program area will focus on the control and prevention of pests, including such concepts as pest identification, pest biology, inspection and monitoring, pest thresholds, habitats and habitat management as it relates to pest control, exclusion, and pesticide chemistry and formulations. The previously stated areas of focus must be considered within the context of climate change. Changes in climate, including global warming, have led to a need to develop an agriculture system that maintains high productivity in the face of climate changes and reduce greenhouse gas emissions.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	0%	0%	4%	0%
102	Soil, Plant, Water, Nutrient Relationships	5%	0%	44%	0%
104	Protect Soil from Harmful Effects of Natural Elements	0%	0%	3%	0%
111	Conservation and Efficient Use of Water	10%	0%	19%	0%
112	Watershed Protection and Management	5%	0%	11%	0%
132	Weather and Climate	5%	0%	1%	0%
133	Pollution Prevention and Mitigation	5%	0%	18%	0%
205	Plant Management Systems	10%	0%	0%	0%
206	Basic Plant Biology	5%	0%	0%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	10%	0%	0%	0%
212	Pathogens and Nematodes Affecting Plants	5%	0%	0%	0%
213	Weeds Affecting Plants	5%	0%	0%	0%
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%	0%	0%	0%
215	Biological Control of Pests Affecting Plants	5%	0%	0%	0%
216	Integrated Pest Management Systems	5%	0%	0%	0%
403	Waste Disposal, Recycling, and Reuse	5%	0%	0%	0%
405	Drainage and Irrigation Systems and Facilities	5%	0%	0%	0%
721	Insects and Other Pests Affecting Humans	5%	0%	0%	0%
903	Communication, Education, and Information Delivery	5%	0%	0%	0%
	Total	100%	0%	100%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Issues associated with environmental systems and sustainability (including water quality, water use, and water conservation) continue to be important focus areas of research and Extension education programs. Water conservation practices for agricultural crop production systems and the general public are needed to promote conservation of water resources in Mississippi. Proper disposal of agricultural wastes, such as waste pesticides, solid wastes, and other waste products are other important issues

among agricultural producers. Research and education programs are targeted toward agricultural producers to address potential water quality and environmental impacts associated with nutrient management, animal and row crop production, as well as reach other rural audiences potentially impacted by agricultural production. Additionally, recent climate data indicate that higher variability and greater incidence of catastrophic weather must be considered when seeking to address environmental systems and sustainability.

Integrated pest management (IPM) is also related to environmental systems and sustainability. Extension entomologists and research scientists have begun an increased effort to provide reliable and sustainable information to producers and consultants on scouting techniques, thresholds, identification, and pest biology. With the "new" high management soybean and corn plantings, producers have adopted some of the high spray practices from cotton. There are numerous producers that will make "convenience" sprays with insecticides if they are going across the field with an herbicide or fungicide to save on application cost. These convenience sprays are often not justified.

Mississippi consistently ranks in the top 5 states of West Nile Virus cases per 100,000 population (Lindsey et al. 2008, Vector-borne and Zoonotic Diseases 8: 35-39), so effective (even chemical-based) mosquito control is definitely needed. Unfortunately, no public health IPM efforts have been promoted in Mississippi and only rarely have such practices ever been conducted. Mosquito control often only consists of routine spraying with a truck-mounted ULV machine. Rocky Mountain spotted fever and other tick-borne diseases are present in Mississippi and tick control efforts are sometimes implemented at city and state parks. Education on prevention and control of tick-borne diseases is also needed in this state. This aspect of the program will help ensure safe and effective public health pest control in towns and cities throughout Mississippi and will promote adoption of IPM principles such as education, source reduction, and least use of the least toxic products.

Mississippi has over 2.9 million citizens, representing just over a million individual households. Each of these households is in need of information and education on how to best avoid, manage, and/or control insect pests and plant diseases that adversely affect household members and their property. Thus, training and assistance will be provided to clients that will help them to prevent or solve insect pest and plant disease problems they encounter in their home, garden, or landscape.

2. Scope of the Program

- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Extension and research are equipped to conduct the research pertinent to the planned program area and effectively deliver its components to the targeted audiences; and the targeted audiences are in a position to and are willing to implement strategies related to environmental systems and sustainability.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to change the practices of the general public and agricultural production practices for the sustainability of environmental systems.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	9.0	0.0	4.0	0.0
2016	9.0	0.0	4.0	0.0
2017	9.0	0.0	4.0	0.0
2018	9.0	0.0	4.0	0.0
2019	9.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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

As related to environmental systems, research and Extension programming will be conducted in many IPM areas, including the following:

1. Urban entomology and plant pathology,
2. Plant disease and nematode diagnostics,
3. Cotton and corn pest management,
4. Greenhouse tomato pest management,
5. Soybean management by application of research and technology, and
6. Public health issues related to vector control.

Research and Extension programming related to water resources will focus on:

1. Development of best management practices to reduce nutrient and sediment transport in rowcrop and pasture systems.
2. Watershed scale assessment of individual and cumulative effects of BMPS on nutrient and sediment transport and water quality.
3. Development and evaluation of irrigation technologies that conserve water and energy.
4. Transfer of technologies that enhance water quality and reduce groundwater demands to producers and other stakeholders.

Research and Extension programming related to renewable fuels will focus on:

1. Development and evaluation of advanced plant materials that provide a renewable source of biomass for green energy production.

2. Development and evaluation of conversion technologies for producing advanced transportation fuels from renewable biomass and waste streams.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Workshop ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

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

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

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

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of producers adopting new practices, technologies, strategies, or systems based on research/Extension recommendations.
2	Number of producers reporting increased income or profits/decreased expenses based on practice changes.
3	Number of producers reducing environmental impacts of pesticide use.
4	Number of new technologies, practices, production systems developed that enhance environmental stewardship while sustaining productivity and profitability.

Outcome # 1

1. Outcome Target

Number of producers adopting new practices, technologies, strategies, or systems based on research/Extension recommendations.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of producers reducing environmental impacts of pesticide use.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of new technologies, practices, production systems developed that enhance environmental stewardship while sustaining productivity and profitability.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Many potential factors may affect the implementation and success of this program. Among these are changing political climates and priorities; changing internal policies and priorities; potentially conflicting interests of stakeholders; the impact of natural disasters such as hurricanes, floods, and tornadoes; and funding limitations.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation of this MSU program will include retrospective producer surveys and case studies of selected producers. Additionally, a standardized evaluation has been developed that will be available for use at any MSU Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. The evaluation results will be a combination of this quantitative and qualitative data.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Forestry

2. Brief summary about Planned Program

This MSU program includes research and Extension efforts in forestry, including forest production and management, forest recovery, timber harvesting, and environmental stewardship. This program is increasingly giving attention to sustainable energy and climate change.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
121	Management of Range Resources	0%	0%	32%	0%
122	Management and Control of Forest and Range Fires	20%	0%	0%	0%
123	Management and Sustainability of Forest Resources	40%	0%	67%	0%
124	Urban Forestry	10%	0%	0%	0%
125	Agroforestry	15%	0%	1%	0%
132	Weather and Climate	5%	0%	0%	0%
133	Pollution Prevention and Mitigation	5%	0%	0%	0%
403	Waste Disposal, Recycling, and Reuse	5%	0%	0%	0%
	Total	100%	0%	100%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Mississippi's forest industry (including private landowners, independent harvesters, and industry) harvested and delivered around \$1.17 billion worth of timber to mills and other processors in 2013; this value is up 15% from 2012 and up 17% from the five-year average. Timber generally ranks as the first or second most valuable agricultural commodity in the state, usually second behind only poultry and eggs production. Mississippi is a heavily forested state with 19.7 million acres of forestland (over 60% of the

state's land area). The total economic impact of forestry and the forest products industry is \$17.4 billion. Approximately 72% of the state's forestland is owned by private, nonindustrial forest landowners.

2. Scope of the Program

- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Changes in markets and the overall economy have resulted in prices falling for pine saw timber and chip-n-saw material. In addition, various mill closings around Mississippi have reduced the demand for pulpwood and timber markets. The return of past markets, as well as the development of new processes and materials will play a large significant role in the long-term health of forestry and the forest products industry in Mississippi.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to increase the profitability of forest production and improve the environmental stewardship of forest landowners.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	11.0	0.0	0.0	0.0
2016	11.0	0.0	0.0	0.0
2017	11.0	0.0	0.0	0.0
2018	11.0	0.0	0.0	0.0
2019	11.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods

<ul style="list-style-type: none">● Education Class● Workshop● One-on-One Intervention● Demonstrations● Other 1 (Interactive Video)	<ul style="list-style-type: none">● Newsletters● Web sites other than eXtension
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3. Description of targeted audience

The audience for these programs includes forest landowners, loggers, professional foresters, industry personnel, and the general public.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of producers and industry attending seminars, workshops, short courses, and demonstrations. (MSU)
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of producers adopting new technologies or practices based on research/Extension recommendations.
2	Number of timber producers increasing profitability of their forest operations.
3	Number of producers improving their environmental stewardship.
4	Number of producers reporting increased income/decreased expenses based on practice changes.
5	Number of new technologies, practices, production systems developed that enhance forest productivity, environmental stewardship and profitability.

Outcome # 1

1. Outcome Target

Number of producers adopting new technologies or practices based on research/Extension recommendations.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of timber producers increasing profitability of their forest operations.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 125 - Agroforestry

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of producers improving their environmental stewardship.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 122 - Management and Control of Forest and Range Fires
- 133 - Pollution Prevention and Mitigation
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 125 - Agroforestry

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of new technologies, practices, production systems developed that enhance forest productivity, environmental stewardship and profitability.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 125 - Agroforestry

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Natural disasters, particularly hurricanes and tornadoes, are particularly harsh on forest holdings. The effects of Hurricane Katrina have had, and will continue to have a significant impact on outreach efforts and directions for years to come. Policy changes, especially regarding importing of cheap timber from other countries, can have a big impact on the industry. Government regulations, especially regarding environmental issues, can increase production and harvesting costs.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation of this MSU program will include retrospective producer surveys and case studies of selected producers. The time series analysis will include production data for forest crops in Mississippi. Additionally, a standardized evaluation has been developed that will be available for use at any MSU Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. The evaluation results will be a combination of this quantitative and qualitative data.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Wildlife and Fisheries

2. Brief summary about Planned Program

This MSU program focuses on wildlife habitat management, wildlife enterprise development, and management of human-wildlife conflicts. Attention must increasingly be dedicated to climate changes that affect Mississippi's natural resources, including wildlife and fisheries.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	5%	0%	0%	0%
131	Alternative Uses of Land	10%	0%	0%	0%
132	Weather and Climate	5%	0%	0%	0%
135	Aquatic and Terrestrial Wildlife	15%	0%	100%	0%
136	Conservation of Biological Diversity	5%	0%	0%	0%
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	15%	0%	0%	0%
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	5%	0%	0%	0%
604	Marketing and Distribution Practices	10%	0%	0%	0%
605	Natural Resource and Environmental Economics	15%	0%	0%	0%
722	Zoonotic Diseases and Parasites Affecting Humans	5%	0%	0%	0%
903	Communication, Education, and Information Delivery	10%	0%	0%	0%
	Total	100%	0%	100%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Mississippi is rich in wildlife and fisheries resources that are important to its heritage, culture, and economic well-being. State residents and nonresidents aged 16 years and older spent approximately \$2.7 billion in 2013 in consumptive and non-consumptive wildlife-related recreation. Over 600,000 Mississippians (16 years or older) fish, hunt, or watch wildlife. Most of Mississippi is either privately owned or industrial forest or agricultural land with a high potential for fish and wildlife production and management. Many landowners do not know how to manage their land properly for different species of these resources and need current research-based information. Much of the state's 19.7 million acres of commercial and private forestland, 345,000 acres of ponds, 14,000 miles of streams and rivers, 295,000 acres of large lakes and reservoirs, and 13 million acres of agricultural open lands is not managed for wildlife/fisheries. Additionally, opportunities for quality recreational experiences and/or additional revenue generation through development of wildlife/fisheries-related enterprises exist on Mississippi land bases for property owners and resource stakeholders.

Sociological and demographic changes associated with increased urbanization and changing lifestyles, coupled with greater public demand for enjoyment of wildlife and fisheries resources, have led to new dilemmas in conservation issues, as well as user conflicts. These dilemmas are frequently compounded by increased public awareness and involvement in issues such as endangered/threatened species conservation, traditional hunting/fishing activities, environmental stewardship and quality of life, wildlife/fisheries population management, ecosystem restoration and habitat management, and agricultural and agroforestry intensification.

Urban and Exurban development and expanding suburbia have increased opportunities for human wildlife conflicts along the urban/wildlife interface. Examples of these conflicts include deer/auto collisions, disease transmission, depredation by herbivores on landscaping, depredation by predators on pets and livestock, and other property damage. Translocation, establishment, and range expansion of non-native invasive species such as feral hogs, have resulted in increased economic losses to agricultural producers, disease transmission to livestock and humans, competition with native species, and destruction of endemic natural resources. Technologies and information on control, mitigation, and management of human-wildlife conflicts is needed to conserve economic and ecological integrity of managed and natural systems in Mississippi.

To address current and future challenges in wildlife and fisheries management, Mississippians need accurate and reliable information. This need can be met through well-designed and executed research, combined with pro-active, client-driven Extension programming.

2. Scope of the Program

- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Three major assumptions are made for this planned program:

- Wildlife and fisheries resources in Mississippi must be conserved, developed, and used appropriately and training, technology transfer, and other services can be utilized to educate the public on how to do so.
- To ensure a sound conservation ethic among the citizenry regarding our natural resources, training of our youth at the critical ages (8-12) is essential.
- It is important to ensure that educators of children in grades K-12 understand and respect fundamental principles of natural resources conservation which aids in compliance of environmental

education standards by the National Council for the Accrediting of Teacher Education.

2. Ultimate goal(s) of this Program

The ultimate goal for this program is to increase respect for and enjoyment and profitability of human and wildlife/fisheries interactions in Mississippi.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	9.4	0.0	1.0	0.0
2016	9.4	0.0	1.0	0.0
2017	9.4	0.0	1.0	0.0
2018	9.4	0.0	1.0	0.0
2019	9.4	0.0	1.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

In-state and multistate research and Extension activities will be conducted related to wildlife and fisheries habitat management, wildlife enterprise development, human-wildlife conflicts, and youth (K-12) education.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

The target audience for this project consists of most Mississippians, including those who hunt, fish, and watch wildlife; those who interact with wildlife at work and home; those who work in related industries and professions; and those who educate our youth (K-12).

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

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

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of producers adopting new practices based on research/Extension recommendations.
2	Number of wildlife professionals improving their skills in handling wildlife damage issues.
3	Number of non-industrialized, private landowners initiating wildlife-related enterprises.
4	Number of landowners reporting improved wildlife conservation due to management practices.
5	Number of producers reporting increased income/decreased expenses based on practice changes.
6	Number of youth increasing awareness or knowledge of environmental stewardship or conservation.
7	Number of new management practices, conservation systems, and policies developed that enhance wildlife conservation and environmental sustainability.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate
- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 605 - Natural Resource and Environmental Economics
- 722 - Zoonotic Diseases and Parasites Affecting Humans
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of wildlife professionals improving their skills in handling wildlife damage issues.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 135 - Aquatic and Terrestrial Wildlife
- 605 - Natural Resource and Environmental Economics
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of non-industrialized, private landowners initiating wildlife-related enterprises.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 136 - Conservation of Biological Diversity
- 605 - Natural Resource and Environmental Economics
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 135 - Aquatic and Terrestrial Wildlife
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 131 - Alternative Uses of Land
- 132 - Weather and Climate
- 136 - Conservation of Biological Diversity
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Number of youth increasing awareness or knowledge of environmental stewardship or conservation.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

Number of new management practices, conservation systems, and policies developed that enhance wildlife conservation and environmental sustainability.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 135 - Aquatic and Terrestrial Wildlife

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

The most likely limiting factor for the program is competing programmatic challenges that might impact funding for wildlife research and Extension programming. The economy, natural disasters, and government regulations might influence clientele interest in the program by replacing wildlife conservation with other concerns, especially short-term.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation of this MSU program will include retrospective producer surveys and case studies of selected clientele. The time series analysis will consist of wildlife population and harvest statistics for Mississippi. Additionally, a standardized evaluation has been developed that will be available for use at any MSU Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. The evaluation results will be a combination of this quantitative and qualitative data.

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Community Resource and Economic Development

2. Brief summary about Planned Program

Throughout its history, Extension has partnered with citizens, local leaders, and local government to strengthen the capacity of rural and urban communities to meet the most pressing needs and address public issues effectively. Through formal and what could be considered informal leaders, Extension has made and will continue to make major contributions toward the preparation of citizens and local government officials for strengthening organizations and communities. Such endeavors could focus on:

- Helping local communities evaluate their local economy and make decisions about alternatives for improving their economy;
- Helping local communities with business development, non-profit development, cooperative development, and workforce (career) development;
- Helping local communities improve their local health care services;
- Developing local community leadership that creates a diverse environment and promotes a shared vision among residents;
- Assessing tourism potential and developing models and strategies to turn that potential into increased tourism and economic development; and
- Assisting local government officials, local units of government, and associations of local government officials in their efforts to improve governance at the grassroots and delivery of services to the citizens of Mississippi.

A collaborative effort between Extension and research will promote the best community and economic development practices to reduce economic development challenges in rural and urban communities.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
602	Business Management, Finance, and Taxation	0%	0%	0%	20%
603	Market Economics	0%	0%	0%	30%
608	Community Resource Planning and Development	25%	100%	0%	20%
609	Economic Theory and Methods	25%	0%	0%	30%
802	Human Development and Family Well-Being	5%	0%	0%	0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	20%	0%	0%	0%
805	Community Institutions, Health, and Social Services	25%	0%	100%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Most counties in Mississippi are socioeconomically depressed. The unemployment rate in impoverished counties in MS ranges from 10-17.3%. Most (64 of 82) counties have per capita income of less than the state's average of approximately \$20,000, and 17 counties have income per capita of less than \$15,000.

Local economies include businesses, governments, and consumers who conduct thousands of interrelated transactions every day. As community leaders evaluate their local economy and learn which sectors are competitive in their unique locality, they can make decisions about strategies for diversification. To meet the complexities of community issues, citizens and leaders are increasingly being encouraged to participate in community action. However, there is a lack of citizen participation in community and civic activities and a need to expand the quality of human capital and promote broad-based involvement of individuals in the civic life of communities.

Community Resource and Economic Development can address needs in community systems, such as the health care sector. MS is greatly underserved by physicians. According to the State Physician Workforce Data Book, in 2013, there were 180.8 primary care practitioners per 100,000 people compared to the national average of 260.5, ranking Mississippi at the bottom. Health care can be an economic engine. The health services sector makes up a substantial part of many rural economies, and is often the largest single employer in many communities.

For communities to be successful, they must support and nurture a leadership philosophy that welcomes widespread citizen involvement. According to a report by the Southern Rural Development Center, building civically minded citizens within rural communities requires that (1) all segments of the community be involved in guiding the future of the community, (2) new and expanded leadership development opportunities be provided, (3) leadership responsibilities should be shared in order to build

trust, and (4) support of the establishment of local-oriented small and entrepreneurial businesses must be evident.

Within their respective election cycles, some 3,000 local elected officials are given responsibility by the electorate for the formulation, adoption, and implementation of public policy in Mississippi's 82 counties and 297 municipalities. Typically, one-third to one-half of these officials will be newly-elected, having never held public office. In addition, some 2,000 major appointed county and municipal officials assist these elected officials in governing and providing services.

Launching a tourism initiative is one way to diversify and improve community economic vitality. Rural communities are searching for methods to strengthen traditionally agricultural-based economies. As a community or region takes inventory of existing or potential attractions, such as festivals and events, natural resources, historical attractions, and recreation opportunities, local leaders should be mindful that tourism is a highly competitive business. A prepared community is the foundation of a successful tourism initiative.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Most communities lack the resources to appropriately examine the consequences of events that can affect the economy. Communities that focus efforts on developing health care services will improve the health and livability of their communities. Talents and skills of local residents can be used to evoke positive community change; therefore, a leadership approach that targets people with diverse ethnic, social, and economic backgrounds is extremely important to the vitality of a given community. Not only should current, traditional leaders participate in leadership training, but potential leaders with nontraditional leadership roles should be actively involved as well. Thus, an ongoing network of community leaders is formed to help shape the future direction of their respective communities. Through an asset-based community development approach, rural communities challenged with struggling economies are model communities where tourism initiatives could be successful. By inventorying, improving, and marketing existing resources and tapping into potential resources, communities that follow the tourism model for proper development learn how to revitalize their local economies and enjoy an improved quality of life for their residents. The better educated a local official, the better job he or she will do in meeting the needs of the citizens. The Mississippi legislature will continue to recognize the importance of training of public officials and will mandate this responsibility to the extension service.

If clientele participate in leadership development programs offered through Extension, they are better prepared to assume positions of leadership. As participants put into action their leadership styles and theory, Mississippi communities can improve. Additionally, the collaborative effort of Extension and research will help identify internal and external community assets and build and strengthen capacity of leaders and citizens to resolve community issues.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to develop local communities through:

- Expanding the diversity of local economies;
- Improving access to quality health care services for local citizens, with viable local health care organizations providing that care;
- Developing leadership abilities in local communities;
- Increasing tourism in local communities, thereby increasing the viability of local economies;
- Equipping local government officials with the skills and knowledge they need to be effective in their jobs and provide better local government to the citizens of Mississippi; and
- Empower and improve quality of life while promoting sustainable and economic development in communities.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	40.0	2.0	1.0	4.0
2016	40.0	2.0	1.0	4.0
2017	40.0	2.0	1.0	4.0
2018	40.0	2.0	1.0	4.0
2019	40.0	2.0	1.0	4.0

V(F). Planned Program (Activity)

1. Activity for the Program

Extension and research will assist local communities in conducting the following activities to build human capital for empowering citizens and leaders to promote community and economic development:

- Developing demographic, economic, and fiscal profiles;
- Developing economic analyses (e.g., feasibility, impact, export-base, business plans, commuting, trade, shift share, location quotients);
- Providing technical assistance and holding community forums;
- Taking strategic planning surveys (e.g., market assessment, customer satisfaction, hospitality, health);
- Developing market strategies;
- Conducting strategic planning workshops;
- Publishing a directory of local services;
- Developing quantitative profiles of health organizations;
- Conducting feasibility studies;
- Producing gap analyses;
- Promoting coalition building trainings;
- Conducting tourism development workshops;
- Providing customer service/hospitality trainings;
- Conducting leadership development workshops;

- Conducting anti-poverty programs; and
- Providing technical assistance to counties and municipalities in such areas as general management, financial administration, personnel administration, leadership development, economic development, community facilities and services, and solid waste management.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> • Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Community forums) • Other 2 (Surveys) 	<ul style="list-style-type: none"> • Public Service Announcement • Newsletters • eXtension web sites • Web sites other than eXtension

3. Description of targeted audience

The target audience for this program consists of local communities and their leaders, community members interested in improving their community, community-based organizations, nonprofit organizations, cooperatives, entrepreneurs, and limited-resource individuals and families. This includes master Extension volunteers and 4-H volunteers.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of clientele attending workshops, seminars, and short courses. (MSU)
 - Number of communities requesting economic analyses. (MSU)
 - Number of communities participating in community health improvement activities. (MSU)
 - Conduct social, psychological, marketing, and economic impact surveys to develop profiles of communities and their economic landscape (Number of surveys) (ASU)
 - Develop educational bulletins, manuscripts, and documentation of findings and disseminate results and models to promote food security, community development, and empowerment of residents. (Number of special reports, newsletters, and fact sheets) (ASU)
 - Conduct educational programs, events, and activities on leadership development and E-commerce strategies to facilitate economic and community development. (ASU)
 - Conduct educational programs, events, and activities to facilitate workforce development and financial management opportunities for limited-resource audiences. (ASU)
 - Conduct educational programs, events, and activities on cooperative development, home-based, faith-based, and agricultural and non-agricultural business development to enhance economic development opportunities in communities. (ASU)
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of community leaders improving knowledge and skills.
2	Number of participants implementing strategies to improve public decision-making and/or increase civic engagement.
3	Number of local government officials obtaining required certifications.
4	Number of local communities adopting recommended strategies to improve their local economy.
5	Number of local communities adopting recommended strategies to improve health services.
6	Number of communities implementing strategies for improvement, development, and/or marketing of tourist attractions.
7	Number of communities reporting an increase in local broadband adoption and use.
8	Number of clientele who make use of leadership skills by volunteering for community organizations.
9	Number and/or percentage of participants that utilize research data, knowledge, and skills disseminated to attract and retain businesses, encourage economic development projects, and improve food security.
10	Number and/or percentage of individuals that gain awareness of the role of entrepreneurship in achieving economic development.
11	Number and/or percentage of community leaders that demonstrate greater knowledge, develop leadership skills, and become involved in civic activities, community, and economic development opportunities.
12	Number and/or percentage of cooperatives that report improvements in their production, marketing, financial, and management practices.
13	Number and/or percentage of community officials and organizations that gain awareness of local issues on food security, economic, and demographic profiles of communities.

Outcome # 1

1. Outcome Target

Number of community leaders improving knowledge and skills.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 609 - Economic Theory and Methods
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 609 - Economic Theory and Methods
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of local government officials obtaining required certifications.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Number of local communities adopting recommended strategies to improve their local economy.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 609 - Economic Theory and Methods

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of local communities adopting recommended strategies to improve health services.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Number of communities implementing strategies for improvement, development, and/or marketing of tourist attractions.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 7

1. Outcome Target

Number of communities reporting an increase in local broadband adoption and use.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being
- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 9

1. Outcome Target

Number and/or percentage of participants that utilize research data, knowledge, and skills disseminated to attract and retain businesses, encourage economic development projects, and improve food security.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 608 - Community Resource Planning and Development
- 609 - Economic Theory and Methods

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 10

1. Outcome Target

Number and/or percentage of individuals that gain awareness of the role of entrepreneurship in achieving economic development.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics

- 608 - Community Resource Planning and Development
- 609 - Economic Theory and Methods

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 11

1. Outcome Target

Number and/or percentage of community leaders that demonstrate greater knowledge, develop leadership skills, and become involved in civic activities, community, and economic development opportunities.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 608 - Community Resource Planning and Development
- 609 - Economic Theory and Methods

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 12

1. Outcome Target

Number and/or percentage of cooperatives that report improvements in their production, marketing, financial, and management practices.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 608 - Community Resource Planning and Development
- 609 - Economic Theory and Methods

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 13

1. Outcome Target

Number and/or percentage of community officials and organizations that gain awareness of local issues on food security, economic, and demographic profiles of communities.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 608 - Community Resource Planning and Development
- 609 - Economic Theory and Methods

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

The most important factor influencing this program is the local economy and its ability to sustain and improve local communities. Funding for programming could affect the ability of this program to meet goals. The unpredictable weather conditions during certain times of the year may restrict project activities, such as survey administration, community meetings, and workshops, during projected periods

of Extension and research activities. Over a period of years the local and national economies are likely to decline due to changing business cycles and funding opportunities. Economic factors could possibly reduce the number of potential volunteers. Legislative policies and variations in appropriation priorities may affect funding. This shift will hamper funding for community and economic development projects. Federal and local government policies may change which would constrain some programs. Social, economic, and demographic changes in various communities may force certain authorities to modify their public priorities. Pending changes in immigration laws may affect migration and other demographic issues, public policies, and program priorities.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

At MSU, retrospective studies will be used to measure knowledge gained by local community leaders. Case study analyses will be used to determine economic changes in local communities. Additionally, a standardized evaluation has been developed that will be available for use at any Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. The evaluation results will be a combination of this quantitative and qualitative data.

At ASU, the success and accomplishments of this program will be evaluated based on the following measures: (a) the number of communities and county officials showing interest in and wanting to continue support for the project in consecutive years; (b) reported level of improvement in the attitudes and experiences of the residents in terms of social consciousness and appreciation for community life and the needs of the poor, (c) the amount of additional financial support received and the number of cooperating organizations involved each year, over the life of the project, and (d) feedback, comments and reflections from participants relevant to the educational programs offered by Alcorn Extension.

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

4-H and Youth Development

2. Brief summary about Planned Program

This program includes all efforts regarding 4-H youth development by Extension, including military, volunteer development, and youth at risk. Additional topics affecting the broader youth population addressed in this program include (1) helping youth reduce high-risk behaviors and increase healthy behaviors, (2) supporting the development of youth leadership among limited-resource schools and communities, and (3) developing healthy families.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	0%	20%	0%	25%
724	Healthy Lifestyle	0%	20%	0%	25%
801	Individual and Family Resource Management	0%	20%	0%	25%
802	Human Development and Family Well-Being	0%	20%	0%	25%
806	Youth Development	100%	20%	0%	0%
	Total	100%	100%	0%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Parents want their children to grow into healthy, productive, successful adults. 4-H helps youth acquire knowledge that can enable them to develop such life skills as: communication, decision-making, leadership, interpersonal relations, and community awareness. 4-H also helps youth form attitudes that will enable them to become self-directing, productive, and contributing members of society. The 4-H mission is accomplished through the involvement of parents, volunteer leaders, Extension agents, and other adults who organize and conduct educational experiences in community, school, and family settings. 4-H learning experiences are designed to help youth work with others in real-life situations. These experiences encourage family interactions by promoting individual growth in knowledge, skills, and attitudes. Volunteers are vital to the 4-H Youth Development Program. There is a need to provide Extension Agents

with the skills that they need to become effective managers of volunteers, to equip 4-H volunteers with the skills that they need to become successful as 4-H club managers, and to provide learn-by-doing opportunities for youth to develop as leaders in their clubs and serve in county, district, and state leadership roles in Mississippi 4-H.

Mississippi is ranked 49th by the National Kids Count analysis of the status of children, up from 50th for the second time in over 20 years. Nearly 35% of MS children live in poverty, with 16% in extreme poverty (both higher than the national averages). Young children are particularly likely to live in low-income families. More than 40% of MS children live in families where no parent has full-time, year round employment, and 49% of the children are living in single-parent households.

Low wages and a lack of higher education contribute to families having insufficient incomes. Parents without a college education often struggle to earn enough to support a family, and substantial portions of MS children whose parents only have a high school diploma - 74% - are low income. The most recent high school graduation rate in MS is 75.5%, with a dropout rate of 13.9%. Twelve percent of teens ages 16-19 are not attending school or working. According to the 2013 Bureau of Labor Statistics, MS has the highest youth unemployment rate in the nation at 23%. A high number of graduating seniors will leave high school lacking the skills necessary to secure a job.

The last MS Youth Risk Behavior Survey (2011) identified a number of problems affecting the healthy development of youth: injury, violence, suicide, tobacco use, alcohol and drug use, sexual activity, diet, weight, and physical activity. MS continues to have one of the highest obesity rates in the nation. Overweight children miss more school days and have poorer academic performance than non-overweight children. The risk factors for heart disease (such as high cholesterol and high blood pressure) and Type-2 diabetes occur more frequently in overweight children.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

There is a strong commitment to youth development in the state and a dedicated volunteer core. Additionally, 4-H will continue to have strong funding support at the local and state level. MS youth are at risk for school failure, abuse, neglect, poor health, crime, and violence. These youth are also at long-term risk of not becoming dependable family members, workers, and involved citizens. Youth of limited-resource families experience fewer opportunities to become leaders and gain skills to enhance their own development to build their self-confidence within their schools and in communities. Also, due to limited financial resources they experience fewer chances to develop skills through involvement in school and community activities and events. All MS youth need knowledge skills and behavior to lead fulfilling lives and to become engaged throughout their communities.

Situational barriers, lack of income, and time will be factors that prevent youth and their caregivers from participating in educational programs on a consistent basis. This program area requires significant recruitment, development, and sustainability of volunteers to support outreach. The program also assumes

that interventions with youth and families must consider culturally appropriate activities to gain trust in order to have high levels of success and opportunities for sustainable behavior change.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is the development of life skills (e.g., coping skills, leadership skills, decision making skills) in youth.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	75.0	9.0	0.0	0.0
2016	75.0	9.0	0.0	0.0
2017	75.0	9.0	0.0	0.0
2018	75.0	9.0	0.0	0.0
2019	75.0	9.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Activities will include:

- Recruit youth and volunteers;
- Provide educational programs, events and activities in local schools and community settings to aid youth in resisting risky behaviors and promoting healthy development;
- Coordinate leadership camps;
- Provide financial resource management programs and career days/fairs;
- Provide programs, events, and activities to improve parenting practices that will enhance parent-child relationships;
- Provide programs on child development for developing and enhancing afterschool programs and other learning environments for children;
- Conduct research to address the nutrition, health, fitness, wellness, and obesity issues facing youth;
- Provide volunteer leader training for youth leaders and adult volunteers;
- Provide training on organization and maintenance of community clubs;
- Provide recognition events for youth to exhibit project skills, including 4-H Club Congress, District Achievement Days, County, State, & Regional Fairs, and Livestock and Horse Shows, National 4-H Congress; and
- Provide training to Extension personnel on experiential education through subject-matter work, as well as Chartering all 4-H Clubs and groups, Four Essential Elements, Legal Use of the Name and Emblem, Diversity Training, and Financial Management.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Regional youth summits) ● Other 2 (Summer camps & mini-conferences) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Billboards ● Newsletters ● TV Media Programs ● Web sites other than eXtension ● Other 1 (Fact sheets)

3. Description of targeted 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.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of youth enrolled in 4-H Clubs. (MSU)
- Number of clubs operating on military bases. (MSU)
- Number of volunteers attending local, district, state, and/or regional leader trainings or conferences. (MSU)
- Conduct educational programs, events, and activities on risky behaviors affecting youth. (ASU)
- Conduct career/workforce educational sessions in local schools and communities. (ASU)
- Conduct leadership development educational programs, events, and activities to provide opportunities at the county, regional, state, and national levels (e.g., Youth Leadership Academy, 4-H Achievement Day, State Club Congress, MS State Fair, National 4-H Conference, and National 4-H Congress). (ASU)
- Conduct science, engineering, and technology programs, events, and activities to attract the interest of youth in these educational fields. (ASU)
- Conduct educational training for volunteer leaders to organize and maintain school and community clubs. (ASU)
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Adult and youth volunteers increase their knowledge and incorporate skills in being effective volunteer leaders.
2	Volunteer-managed 4-H clubs are sustained at the local level.
3	Number of youth who improve life skills.
4	Number of youth who increase knowledge of subject-matter areas.
5	Youth increase their involvement in leadership events and activities at the district, state, and national levels.
6	Number of youth that report reduction of risky behavior that benefits his/her social and educational development.
7	Number of minority youth that independently select to participate in leadership competitions, youth events, activities, and community projects.
8	Number of trained volunteer leaders that independently organize and manage school and community youth clubs.
9	Number of youth that report seeking and gaining employment based on training and guidance provided by the 4-H program on financial well-being.
10	Number of youth that participate in science, engineering, and technology programs.
11	Number of youth that participate in career/workforce development program to prepare for the future.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Volunteer-managed 4-H clubs are sustained at the local level.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Number of youth who improve life skills.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

Number of youth that report reduction of risky behavior that benefits his/her social and educational development.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 7

1. Outcome Target

Number of minority youth that independently select to participate in leadership competitions, youth events, activities, and community projects.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 8

1. Outcome Target

Number of trained volunteer leaders that independently organize and manage school and community youth clubs.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 9

1. Outcome Target

Number of youth that report seeking and gaining employment based on training and guidance provided by the 4-H program on financial well-being.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 10

1. Outcome Target

Number of youth that participate in science, engineering, and technology programs.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 11

1. Outcome Target

Number of youth that participate in career/workforce development program to prepare for the future.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1890 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy

- Appropriations changes
- Public Policy changes
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Relocation of youth)

Description

The primary external factors which may affect outcomes would be appropriations changes and population changes. This can include a shift or change in staffing patterns and resources available to conduct the various educational sessions, activities, and events. Youth participants may leave a program because of family relocation (e.g., youth leaving the school district, parent relocating because of employment). Some parents or guardians may not give youth permission to participate in the program (e.g., lack of parental consent). Policy changes in local and state public and private schools and the availability of transportation for participants could affect the program. Finally, natural disasters are always a possibility -- the weather event could not only cancel a planned activity, but could cause families to relocate or cause economic distress.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

At MSU, evaluations will be conducted at both the state and local levels. Most local evaluations will include either after-only, retrospective, or case study methodology. Comparative studies and some retrospective studies will be conducted at the state level. Additionally, a standardized evaluation has been developed that will be available for use at any MSU Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. The evaluation results will be a combination of this quantitative and qualitative data.

At ASU, surveys, interviews, and focus groups will be implemented. Surveys will be used to determine if youth have enhanced their coping skills, developed measurable leadership skills and knowledge, and if families increased the capacity to reach a higher level of parental success, financial independence, and adopt new and valuable leadership skills. Interviews and focus groups will be conducted to determine if participants of educational programs have gained knowledge and/or adopted changes in the areas covered by the program. The surveys, interviews, and focus groups will be conducted in different geographical areas of the state to compare different groups of youth, clubs, and communities served.

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Family and Consumer Sciences

2. Brief summary about Planned Program

This planned program focuses on human development and family well-being. At MSU, special emphasis is placed on improving the health status and quality of early care and education in Mississippi, and equipping families with skills related to financial resource management and family life. At ASU, emphasis will be on implementing programs to provide information about nutrition, healthy lifestyles, and physical fitness to help reduce obesity, as well as conducting research on these topics.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
205	Plant Management Systems	0%	20%	0%	0%
701	Nutrient Composition of Food	0%	0%	1%	0%
703	Nutrition Education and Behavior	20%	15%	3%	0%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	5%	0%	1%	0%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	5%	0%	44%	0%
723	Hazards to Human Health and Safety	0%	0%	1%	0%
724	Healthy Lifestyle	25%	20%	0%	0%
801	Individual and Family Resource Management	15%	15%	1%	0%
802	Human Development and Family Well-Being	30%	15%	28%	0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%	0%	18%	0%
806	Youth Development	0%	15%	0%	0%
903	Communication, Education, and Information Delivery	0%	0%	3%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Situation and Scope)**1. Situation and priorities**

Statistics related to health status, education achievement, and poverty rate of Mississippians reveal the need for community-based programs that can help individuals, families, and communities reach their potential.

MS residents experience significantly higher rates of morbidity and mortality due to chronic diseases directly related to human behaviors. Chronic conditions and illnesses reduce quality of life, decrease workforce productivity, and cause health care costs to spiral. Low levels of education and the high unemployment rate contribute to a lack of insurance and may contribute to MS's high premature death rate (as calculated through years of potential life lost) which is highest in the nation.

Mississippi continues to have the highest obesity rate in the nation. Obesity-related conditions are some of the leading causes of preventable death. Childhood obesity rates present a very pressing concern for the state. Over 40% of MS children are overweight or obese. Recent studies on overweight children have revealed correlations to depression, increased likeliness to miss school, and lowered academic

performance in school.

Obesity-related problems are largely due to poor diets and the perception that being overweight/obese is normal and healthy. Southern style cooking is often rooted in deep fried foods, so it is very difficult to change cooking patterns that are deeply ingrained in Southern culture. Many consumers lack the knowledge and skills essential for healthy living. For example, they might have trouble identifying foods that are good sources of key nutrients, do not understand the link between food choices and health, are not familiar with proper food handling techniques, and need instruction in saving money on food shopping. Compounding this is that people living below the poverty line often eat unhealthy foods and lack access to exercise facilities.

Ensuring a safe food supply is of great importance. Under the MS Food Code, anyone serving food for pay is required to have a permit to operate their facility. These facilities are required to show documentation of food safety knowledge. A required training in the state leads to cleaner and safer facilities and employees who have an increased knowledge of how food becomes unsafe and what groups are at an increased risk for foodborne illnesses.

Health issues in the state are often compounded by educational and family resource management needs. Early care and education providers continue to need quality programming to support their needs. The Mississippi Child Care Resource and Referral Network is housed under MSU Extension and has been given state funding and the responsibility to provide the majority of professional development for early care and education community.

The situation of families and children living in poverty continues to impact the state. One out of every three children lives in poverty. Economic challenges have a great impact on educational programs planned to meet the needs of Mississippians. National debt is at an all-time high relative to disposable income. Moreover, the personal savings rate has hit a record low.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Improving the health of Mississippians, as well as improving the quality of education and decreasing the amount of residents in poverty, will improve the well-being of families in the state. Situational barriers, lack of income, and time can be possible barriers that prevent families from participating in education programs on a regular basis. Additionally, disparities in the prevalence of being overweight and/or obese exist in many segments of the MS population based on race, ethnicity, gender, age, and socioeconomic status. Therefore, we must implement various programs and model activities that will motivate and empower participants to live healthier lifestyles. Training for childcare workers will also enhance the quality of early childhood education in the state and help provide children with the foundation needed for success in school and healthy growth and development.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to help Mississippi families improve their well-being through programs that educate and help families put research-based knowledge to work in their lives.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	39.9	6.2	6.0	0.0
2016	39.9	6.2	6.0	0.0
2017	39.9	6.2	6.0	0.0
2018	39.9	6.2	6.0	0.0
2019	39.9	6.2	6.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Considering the breadth of this program, Extension and research will focus on numerous areas:

- healthy lifestyles education (nutrition, health, fitness, wellness, and obesity),
- proper food handling,
- family resource management,
- preparing a competent early child care workforce, and
- human development.

A variety of approaches will be utilized:

- Educational programs, events, and activities, as well as research, in local schools and communities;
- Hands-on application and demonstration related to community gardens, nutrition education, and physical fitness; and
- Trainings, technical assistance, and certification for childcare workers and centers.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods

<ul style="list-style-type: none">● Education Class● Workshop● Group Discussion● One-on-One Intervention● Demonstrations● Other 1 (Regional youth summits)● Other 2 (Conferences)	<ul style="list-style-type: none">● Public Service Announcement● Newsletters● TV Media Programs● Web sites other than eXtension● Other 1 (Fact sheets)
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3. Description of targeted audience

At MSU, the audience for this program includes all Mississippians. Aspects of this program will target specific professionals or employees, such as food handlers (food safety) and early care/education providers (Mississippi Child Care Research and Referral Network). Other activities in this program--such as those focused on childhood obesity and human health and nutrition--will have a broader focus.

At ASU, the target audiences are at-risk youth age 5 to 19, adults, volunteers, limited-resource families, and limited-resource and socially disadvantaged communities.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of clientele attending workshops, seminars, and short courses. (MSU)
 - Number of people attending certification courses. (MSU)
 - Conduct educational programs on nutrition, health, physical fitness, and wellness for limited-resource adults. (ASU)
 - Conduct research on nutrition, health, wellness, obesity, and opportunities for physical fitness on youth and adults. (ASU)
 - Disseminate information about nutrition, chronic diseases, and weight management. (ASU)
 - Conduct educational programs, events, and activities on effective parenting practices. (ASU)
 - Conduct educational programs on nutrition, health, physical fitness, and wellness for limited-resource youth. (ASU)
 - Conduct educational programs, events, and activities on family financial resource management. (ASU)
 - Conduct educational programs, events, and activities on food safety practices to preserve food quality and food sanitation. (ASU)
 - Conduct educational programs of food safety and sanitation practices. (ASU)
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of clientele reporting changes in lifestyle to improve health.
2	Number of foodservice professionals achieving required certification in food handling techniques.
3	Number of clientele who learn how to use nutritional guidelines to make food decisions.
4	Number of clientele adopting new practices related to financial management.
5	Number of clientele increasing wealth or reducing debt.
6	Number of families adopting recommended family strategies and behaviors.
7	Number of families reporting improved strengthened family life.
8	Number of early childhood providers maintaining certification requirements.
9	Number of early care and education providers increasing the quality of care provided to young children.
10	Number of early childhood educators increasing knowledge in child care and development content areas as measured by pre- and post-assessments.
11	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.
12	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.
13	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.
14	Percentage of participants that utilized knowledge gained and made adjustments in their nutrition and lifestyle behaviors.
15	Number of limited-resource participants that demonstrate the adoption of effective parenting practices to improve parent/child relationships.
16	Number of limited-resource families and youth that report using learned skills to analyze their financial well-being and make effective financial management decisions.
17	Number of new technologies developed that enhance food safety and nutritional quality.

Outcome # 1

1. Outcome Target

Number of clientele reporting changes in lifestyle to improve health.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of foodservice professionals achieving required certification in food handling techniques.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of clientele adopting new practices related to financial management.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of clientele increasing wealth or reducing debt.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Number of families adopting recommended family strategies and behaviors.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

Number of families reporting improved strengthened family life.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

Number of early childhood providers maintaining certification requirements.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 9

1. Outcome Target

Number of early care and education providers increasing the quality of care provided to young children.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 10

1. Outcome Target

Number of early childhood educators increasing knowledge in child care and development content areas as measured by pre- and post-assessments.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 11

1. Outcome Target

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.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 724 - Healthy Lifestyle
- 806 - Youth Development

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 12

1. Outcome Target

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.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 13

1. Outcome Target

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.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 14

1. Outcome Target

Percentage of participants that utilized knowledge gained and made adjustments in their nutrition and lifestyle behaviors.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 15

1. Outcome Target

Number of limited-resource participants that demonstrate the adoption of effective parenting practices to improve parent/child relationships.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 16

1. Outcome Target

Number of limited-resource families and youth that report using learned skills to analyze their financial well-being and make effective financial management decisions.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 17

1. Outcome Target

Number of new technologies developed that enhance food safety and nutritional quality.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

External factors that may affect outcomes include the availability of funding, personnel, and other critical resources in program implementation; weather and general climatic conditions in the targeted areas, including natural disasters; domestic and international policies affecting the agricultural sector; general economic conditions affecting markets and prices. Related specifically to changing lifestyle

habits, while economic factors may have an influence, the most important factor is overcoming cultural traditions related to health.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

At MSU, this program will use both retrospective and before-after methods to measure changes in behaviors related to healthy lifestyle. Immediate and follow-up comparisons of financial indicators will be used. Food safety certification test will be used to assess knowledge gained by food handlers. Quality of care provided by early care and education providers will be measured using the appropriate day care rating scales (ECERS-R, ITERS-R, or FDCERS) using pre-and post-observations. Additionally, a standardized evaluation has been developed that will be available for use at any Extension event or program.

In FY 2014, MSU Extension agents and specialists will be required to submit four quarterly reports (January, April, July, and September). This quarterly report collects information about the number of contacts, types of contacts, and number of programs conducted in each Priority Planning Area. The reporting system will also request impact statements. The evaluation results will be a combination of this quantitative and qualitative data.

To assess the effectiveness of ASU's program, evaluation will be conducted through surveys, pre-and post-testing, and assessments. In the case of educational programs focused on fitness, health, and nutrition, we plan to capture participant's blood pressure, Body Mass Index (BMI), physical agility, and vegetable consumption and knowledge. Activities will also include the collection of primary data from participants, as well as gathering and collating relevant secondary statistical data. ASU will also keep monthly records of established community gardens, physical fitness exercises, and nutrition education for program participants.