

# 2016 Alcorn State University and Mississippi State University Combined Research and Extension Plan of Work

**Status: Accepted**

**Date Accepted: 07/31/2015**

## **I. Plan Overview**

### **1. Brief Summary about Plan Of Work**

This plan of work is a 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 (MSU) has reduced its previous 10 program areas to 5 "imperatives" that were identified through a formal statewide needs assessment process. These five imperatives are:

1. Enhancing the viability of Mississippi's agriculture.
2. Sustaining Mississippi's natural resources and environment.
3. Growing vibrant and successful Mississippi communities and businesses.
4. Building Mississippi's future through positive 4-H youth development.
5. Strengthening and sustaining Mississippi families.

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.

Planned programs of ASU include:

1. Global Food Security and Hunger,
2. Small Family Farm and Marketing,
3. Community Resource and Economic Development,
4. 4-H and Youth Development, and
5. Family and Consumer Science.

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.

The six integrated planned program areas to be addressed by MSU and ASU are:

1. Animal Systems;
2. Plant Systems;
3. Natural Resources;
4. Community Resource and Economic Development;
5. 4-H and Youth Development; and
6. Family and Consumer Science.

These planned programs represent those areas with the greatest need as identified by community partnerships, environmental scans, researchers, stakeholder input, and Extension staff.

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

Year	Extension		Research	
	1862	1890	1862	1890
2016	245.0	36.0	100.0	36.0
2017	245.0	36.0	100.0	36.0
2018	245.0	36.0	100.0	34.0
2019	245.0	36.0	100.0	34.0
2020	245.0	38.0	100.0	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 needs, 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?

The ongoing part of the needs assessment process conducted by MSU Extension and MAFES includes input from stakeholders (e.g., 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; program delivery agreements developed by Extension personnel; and professional peer review of the draft plans of work.

A formal statewide needs assessment was also conducted by MSU Extension in 2014 using a random-digit-dialed telephone survey with a sample of the general public (436 respondents), mail surveys sent to all county Extension advisory committee members (578 respondents), and an online survey for all MSU Extension employees (470 respondents). All three groups were asked to respond "yes" or "no" to a list of 10 to 15 issues within each of three base questions: 1) What are the most important needs for Mississippi? 2) What are the most important concerns for Mississippi families? and 3) What are the most important concerns for the future of your community?

As a result of responses provided, 5 imperatives were identified to drive MSU efforts for the next five years:

1. Enhancing the viability of Mississippi's agriculture (animals and plants);
2. Sustaining Mississippi's natural resources and environment;
3. Growing vibrant and successful Mississippi communities and businesses;
4. Building Mississippi's future through positive 4-H youth development; and
5. Strengthening and sustaining Mississippi families.

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 its five planned programs.

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

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 statewide needs assessment with a random sample of Mississippi citizens. Additionally, the outreach council conducts a series of meetings around the state designed specifically to obtain input from under-served and under-represented populations.

While MSU research and Extension focus on all MS citizens, some programs are designed to reach under-represented 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.

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 ASU's School of Agriculture, Research, Extension, and Applied Sciences research and Extension programs and difference initiatives that will be maintained and/or enhanced 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.
- Extension's 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, a Plan of Work Design Team developed short-, medium-, and long-term outcomes related to increasing knowledge, improving skills, and changing lives, respectively. 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 focus on the development, adoption, and use of information related to key issues facing limited-resource citizens. Finally, long-term outcomes 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).

### **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.

MSU created Program Development Teams as a way for faculty with Extension and/or research appointments the planning, implementation, and evaluation process. These Program Development Teams develop the overall statewide plan of work for the subject-matter area that the team represents. Teams conduct needs assessments; identify program area goals and objectives; develop or identify curricula to address needs; identify indicators of success, evaluation tools, and program outcomes; and train Extension agents to deliver and evaluate the identified curricula.

ASU Extension 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 ASU Extension 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 Extension also implemented a formal statewide needs-assessment survey in 2014 that targeted the general public, Extension advisory council members in all counties, and Extension faculty and staff.

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 Extension 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 were used to identify imperatives to guide future work.

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 Extension conducted a statewide needs-assessment survey in 2014, targeting all county Extension advisory group members (overall council and programmatic councils), regional and statewide councils, stakeholder groups, and the general public.

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	Animal Systems
2	Plant Systems
3	Natural Resources
4	Community Resource and Economic Development
5	4-H and Positive Youth Development
6	Family and Consumer Sciences

## **V(A). Planned Program (Summary)**

### **Program # 1**

#### **1. Name of the Planned Program**

Animal Systems

#### **2. Brief summary about Planned Program**

The Agriculture planned program area combines three program areas at MSU (Animal Systems; Agricultural, Biological, and Natural Resources Engineering; Enterprise Economics) and two programs at ASU (Global Food Security and Hunger; Small Family Farm and Marketing).

This planned program area 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. MSU also focuses on the application of technical, business and management skills to problems in agricultural production, and commodity-related and natural resource management.

At MSU, this program also 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) direct marketing of agriculture and added-value, alternative enterprises, and (e) technical assistance in establishing and maintaining farmers markets.

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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
301	Reproductive Performance of Animals	8%	17%	9%	18%
302	Nutrient Utilization in Animals	10%	17%	29%	10%
303	Genetic Improvement of Animals	5%	8%	1%	9%
304	Animal Genome	5%	0%	8%	0%
305	Animal Physiological Processes	5%	0%	12%	0%
306	Environmental Stress in Animals	5%	0%	6%	0%
307	Animal Management Systems	15%	0%	20%	0%
308	Improved Animal Products (Before Harvest)	5%	8%	2%	9%
311	Animal Diseases	10%	17%	7%	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%	1%	0%
315	Animal Welfare/Well-Being and Protection	10%	0%	0%	0%
402	Engineering Systems and Equipment	5%	0%	0%	0%
501	New and Improved Food Processing Technologies	0%	8%	2%	9%
503	Quality Maintenance in Storing and Marketing Food Products	0%	0%	1%	0%
601	Economics of Agricultural Production and Farm Management	2%	0%	0%	0%
602	Business Management, Finance, and Taxation	0%	8%	0%	9%
603	Market Economics	0%	0%	1%	0%
604	Marketing and Distribution Practices	0%	17%	1%	18%
	<b>Total</b>	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. Mississippi has 37,300 farms on approximately 10,900,000 acres. Almost 18,000 of these farms are involved in

livestock production. Livestock and forage are produced in all 82 counties.

Poultry production is important to economies in many rural areas of the state. In 2014, approximately 738 million broilers were produced. As a \$2.88 billion industry (up 6.2% from 2013), poultry/eggs is the leading agricultural crop in the state.

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 \$397 million, making it 5th among the state's agricultural commodities in 2014; this production value was up 37% from 2013. Total cattle inventory in Mississippi in 2014 was 930,000 head. Beef cattle operations in Mississippi currently total around 15,940. In 2014, there were 95 Grade A dairy herds scattered across the state. In 2014, milk production was estimated at \$45 million, up 9.8% from 2013.

Mississippi's inventory of hogs and pigs was estimated at 500,000 head in 2014 with an estimated production value of \$153 million, up 21% from 2013.

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 2014. Mississippi saw an estimated 7.1% increase in estimated production value -- \$197 million in 2014. This increase came despite losses from infectious and environmental diseases being amplified in the past decade.

A large number of farms in Mississippi are very small and generate less than \$50,000 gross cash farm income (GCFI). 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. However, many times because of the lack of knowledge on new and successful production and market practices, small farmers are not able to maximize yield per acre, increase sales, or reach a better quality of life. Yet they farm for reasons other than profit and will remain in business as long as their farm losses are not unduly large.

Farmers and agribusiness professionals operate in a competitive and rapidly changing environment. Animal producers and industry continue to expand as consumers increasingly demand high quality, affordable products. To thrive in this environment, they need access to timely information, tools to effectively evaluate that information, a better understanding of tools and opportunities that are available to them, and the skills to recognize the need for and implement changes in the management of their operations. Additionally, these stakeholders need access to the most current information and analysis related to proposed policy changes.

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. In addition to traditional disciplines, this program area includes specialists from diverse disciplines such as Computer Science and Engineering, Geosciences, and Agriculture and Biological Engineering that focus on Engineering Systems for Animal Production, Waste Management, Irrigation and Water Resources Technologies, Renewable Fuels Conversion Technology, and Biotechnology.

## **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 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.

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.

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.

However, 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, one assumption is that by providing technical assistance in financial management, small farmers' profit will increase and debt will decrease, thus improving quality of life. 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.

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;
- Improve economic return for animal producers;
- Improve the profitability of livestock and poultry, and cash crop produced by limited-resource farmers;
- Enhance income potential of limited-resource farmers through sustainable production of food and fiber;
- Increase the profitability of farm enterprises so that operations are sustainable;
- Enhance 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;
- Improve the quality of meats through research and appropriate educational programs;
- Develop community-based approaches to promote sustainable food production and overall security;
- Develop an animal production system that is able to adapt to changing environments, sustain economic vitality, and take advantage of opportunities offered by climate change mitigation technologies; and
- 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
2016	14.2	6.0	33.0	4.0
2017	14.2	6.0	33.0	4.0
2018	14.2	6.0	33.0	4.0
2019	14.2	6.0	33.0	4.0
2020	23.2	8.0	33.0	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.

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.

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

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

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

**Extension**

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

**3. Description of targeted audience**

At MSU, the target audiences for this program include producers of beef, dairy, swine, equine, forage, catfish, crayfish, freshwater prawns, and commercial poultry; related industry personnel; and consumers.

At ASU, the target audiences for this program are limited-resource and socially disadvantaged 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 \$39,031 = \$31,224.80 per year). According to 2014 U.S. Census Bureau estimates, Mississippi had a median household income (2009-2013) of \$39,031.

### **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)
- Conduct, collaborate, and participate in educational programs, events, and activities on the utilization of direct marketing of Alternative Agricultural Enterprises. (ASU)
- 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 programs and demonstrations on community and container gardening. (ASU)
  - Conduct, collaborate, and participate in educational programs, events, and activities on the utilization of direct marketing of Alternative Agricultural Enterprises at local Farmers Market. (ASU)
  - 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 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	Clientele increase knowledge about recommended agricultural practices or behaviors. (MSU)
2	Clientele implement recommended agricultural practices or behaviors. (MSU)
3	Clientele report enhanced agricultural productivity and/or profitability. (MSU)
4	Number of program participants that improve livestock production efficiency through best management practices. (ASU)
5	Number of producers that improve pasture grass fed to livestock. (ASU)
6	Number of farmers that utilize artificial insemination and/or embryo transfer to decrease the need to purchase quality male animals and improve herd genetics. (ASU)
7	Number of farmers that adopt pasture or alternative livestock systems as an alternative enterprise. (ASU)
8	Number of new technologies, production practices, or improved production systems developed. (MSU)
9	Number of farmers and vendors that gain knowledge on Direct Marketing of Alternative Agriculture Enterprises. (ASU)
10	Number of new technologies, practices, production systems developed that enhance production, profitability or environmental stewardship. (MSU)
11	Number of policies, decision support tools, and strategies developed that enhance profitability, inform production decision, and mitigate/manage risk. (MSU)
12	Percentage of farmers and producers that gain knowledge on Farm and Financial Management. (ASU)
13	Number of farmers and cooperatives that gain knowledge on the importance of developing and utilizing a marketing plan. (ASU)
14	Percentage of farmers and producers that keeps accurate records. (ASU)
15	Percentage of farmers and producers that applies for farm loans. (ASU)
16	Percentage of farmers and producers that demonstrates minimizing risk on the farm. (ASU)
17	Number of farmers and vendors that report and demonstrate gained knowledge in Direct Marketing to Farmers Markets. (ASU)

### **Outcome # 1**

#### **1. Outcome Target**

Clientele increase knowledge about recommended agricultural practices or behaviors. (MSU)

#### **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
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 402 - Engineering Systems and Equipment
- 501 - New and Improved Food Processing Technologies
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices

#### **4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

### **Outcome # 2**

#### **1. Outcome Target**

Clientele implement recommended agricultural practices or behaviors. (MSU)

#### **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
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 402 - Engineering Systems and Equipment

- 501 - New and Improved Food Processing Technologies
- 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**

Clientele report enhanced agricultural productivity and/or profitability. (MSU)

**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
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 402 - Engineering Systems and Equipment
- 501 - New and Improved Food Processing Technologies
- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices

#### **4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

### **Outcome # 4**

#### **1. Outcome Target**

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

**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 # 5**

**1. Outcome Target**

Number of producers that improve pasture grass fed to livestock. (ASU)

**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 # 6**

**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. (ASU)

**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 # 7**

##### **1. Outcome Target**

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

**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 new technologies, production practices, or improved production systems developed. (MSU)

**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
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 402 - Engineering Systems and Equipment
- 501 - New and Improved Food Processing Technologies
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices

#### **4. Associated Institute Type(s)**

- 1862 Research

#### **Outcome # 9**

##### **1. Outcome Target**

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

**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 new technologies, practices, production systems developed that enhance production, profitability or environmental stewardship. (MSU)

**2. Outcome Type :** Change in Knowledge Outcome Measure

##### **3. Associated Knowledge Area(s)**

- 402 - Engineering Systems and Equipment

#### **4. Associated Institute Type(s)**

- 1862 Research

#### **Outcome # 11**

##### **1. Outcome Target**

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

**2. Outcome Type :** Change in Knowledge 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 Research

**Outcome # 12**

**1. Outcome Target**

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

**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 # 13**

**1. Outcome Target**

Number of farmers and cooperatives that gain knowledge on the importance of developing and utilizing a marketing plan. (ASU)

**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 # 14**

**1. Outcome Target**

Percentage of farmers and producers that keeps accurate records. (ASU)

**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 # 15**

**1. Outcome Target**

Percentage of farmers and producers that applies for farm loans. (ASU)

**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 # 16**

**1. Outcome Target**

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

**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 # 17**

**1. Outcome Target**

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

**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

**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.)
- Other (Personnel availability)

**Description**

As with most production-related programs, the success of this program can be influenced by many factors. 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.

Changing political climates and priorities and 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. The availability of USDA and state-funded programs can also have an impact.

Prices for animal products are somewhat dependent on the local, state, and national economies. Additionally, shifting development patterns and global market influence may affect outcomes. The ability or willingness of younger men and women to become involved in production agriculture will enhance productivity and profitability.

Changes in the population (immigration, new cultural groupings, etc.) can lead to producer/neighbor issues that influence choice of production practices. Additionally, there is potential for conflicting interests of stakeholders and consumers.

## **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. Retrospective studies will also be used to determine adoption strategies and related impacts. Time series analyses will include production data for selected animal production metrics, row-crops, and trends in marketing effectiveness. Additionally, a standardized evaluation is available for use at any Extension event or program.

In FY 2016, 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 the state and nation. Output efforts will measure 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.

Impact evaluation at ASU will determine the extent to which farmers are switching to alternative crop production through sustainable agronomic production practices. Additionally, comparison measures will evaluate: a) crop performances under improved production practices to those produced under conventional production practices, and b) quality of crops produced and additional income generated by farmers who adopted such resources/program, with those still using conventional practices.

ASU will evaluate the Small Family Farm and Marketing program using surveys, farm visits, interviews, and focus groups. Surveys will assess if farmers and limited resource audiences have improved their farm management and marketing knowledge. Farm visits will assess if farmers are adopting farm management and marketing practices. Interviews and focus groups will be conducted in different areas of the state to assess if farmers and participants of educational programs gained knowledge and adopted new practices; groups will be compared.

Other indicators to be used by ASU are: (a) number of communities and county officials showing interest in continued program support; (b) degree of improved commitment, attitudes, and experiences of residents adopting new practices (are participation and outreach outcomes better than before?); (c) amount of additional financial support received and the number of cooperating organizations involved over the life of the project; (d) participant involvement, comments, and reflections on the relevance of educational programs; and (e) peer reviews conducted by researchers, sociologists, and Extension professionals within Extension and academic communities. Effort will be made to ensure that peer reviews are done through area professional publications both internally and externally. Evaluation of the plan and best practices will be ongoing, and the assessment by stakeholders and clients will address final impact at conclusion of the projects.

## **V(A). Planned Program (Summary)**

### **Program # 2**

#### **1. Name of the Planned Program**

Plant Systems

#### **2. Brief summary about Planned Program**

This program includes research and Extension efforts related to the 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 \$114 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.

As in the Animals program area, the Plants program area also focuses on the application of technical, business and management skills to problems in agricultural production, and commodity-related and natural resource management. Additionally, MSU works on a broad level to help agricultural producers improve the profitability of their enterprise through management, marketing, and influencing farm policy, while 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) direct marketing of agriculture and added-value, alternative enterprises, and (e) technical assistance in establishing and maintaining 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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
102	Soil, Plant, Water, Nutrient Relationships	14%	15%	0%	15%
111	Conservation and Efficient Use of Water	12%	0%	0%	0%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	8%	0%
202	Plant Genetic Resources	7%	0%	2%	0%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	12%	0%	3%	0%
204	Plant Product Quality and Utility (Preharvest)	0%	0%	5%	0%
205	Plant Management Systems	22%	25%	26%	20%
206	Basic Plant Biology	0%	0%	4%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	7%	10%	8%	15%
212	Diseases and Nematodes Affecting Plants	7%	0%	14%	0%
213	Weeds Affecting Plants	12%	10%	6%	10%
216	Integrated Pest Management Systems	0%	0%	6%	0%
402	Engineering Systems and Equipment	0%	0%	4%	0%
501	New and Improved Food Processing Technologies	0%	10%	0%	10%
502	New and Improved Food Products	0%	0%	5%	0%
511	New and Improved Non-Food Products and Processes	0%	0%	3%	0%
601	Economics of Agricultural Production and Farm Management	7%	0%	6%	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%
	<b>Total</b>	100%	100%	100%	100%

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

## 1. Situation and priorities

The plant production system in Mississippi is diverse with 37,300 farms on approximately 10,900,000 acres. Several agronomic and horticulture crops are grown. The impact of crops on 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 2.2 million acres with a raw value of \$1,170 million; up 17.8% from 2013. MS growers produced \$350 million of corn on 520,000 acres in 2014, a 44.5% decrease; \$404 million of cotton, a 21.4% increase; \$174 million of rice, a 20% increase; \$105 million of hay on 600,000 acres, a 33% decrease; \$96 million of sweet potatoes on 19,500 acres, a 68% increase; \$67 million of wheat, a 46.8% decrease; \$21 million of peanuts on 29,000 acres, an 8.7% decrease; and \$39 million of grain sorghum on 110,000 acres, a 34.5% increase from 2013.

The majority of MS farms are small family farms or family-owned businesses. 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.

MS'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. In 2014, the value of production for horticulture crops, excluding sweet potatoes, produced by MS growers was \$114 million; a 0.86% decrease from 2013. Additionally, MS spends over \$2.2 billion annually on installation and management of turf.

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.

Plant producers and industry rely on research and Extension to develop applicable and environmentally sound production and maintenance practices; select and develop cultivars suitable under MS's environmental conditions; research, develop, and distribute cultural recommendations; enhance understanding of available marketing tools and opportunities; access to current information and analysis related to proposed policy changes; and, at the state level, encourage economic development. 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**

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. 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 MS. Additionally, 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. While production levels are important to farm viability, marketing, management, and knowledge of policy are also important components of successful enterprises. 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. 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.

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 program aims to increase knowledge of farm management, business management, finance, marketing, and distribution of farm products.

This program will assume research must recognize that while plants 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;
- To develop a plant production system that is able to adapt to changing environments, sustain economic vitality, and take advantage of opportunities offered by climate change mitigation technologies;
- To develop a plant production system that is able to adapt based on agricultural, biological, and natural resource engineering improvements; and
- To enhance 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
2016	38.5	15.0	47.0	7.0
2017	38.5	15.0	47.0	7.0
2018	38.5	15.0	47.0	7.0
2019	38.5	15.0	47.0	7.0
2020	49.3	17.0	47.0	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.

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

**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,
- Agricultural consumers,
- Extension Service personnel, and
- Research faculty and personnel.

At ASU, this program is designed specifically for the limited-resource and socially disadvantaged farmers and residents in Mississippi. Limited-resource residents are those earning 80% or less income of Mississippi's Median Household income (0.80 of \$39,031 = \$31,224.80 per year). According to 2014 U.S. Census Bureau estimates, Mississippi had a median household income (2009-2013) of \$39,031.

### **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 programs and demonstrations on community and container gardening. (ASU)
- Conduct, collaborate and participate in educational programs, events, and activities on the utilization of direct marketing of Alternative Agricultural Enterprises at local Farmers Market (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	Clientele increase knowledge about recommended agricultural practices or behaviors. (MSU)
2	Clientele implement recommended agricultural practices or behaviors. (MSU)
3	Clientele report enhanced agricultural productivity and/or profitability. (MSU)
4	Number of program participants that adopt integrated nutrient management to increase crop production. (ASU)
5	Number of program participants that utilize integrated pest management to improve the quality of vegetable production. (ASU)
6	Number of producers that adopt new crop systems to improve crop yield and quality. (ASU)
7	Number of participants that use recommended cultivar and other production practices to enhance productivity and profitability. (ASU)
8	Number of intended target audience that increase awareness and knowledge and awareness of growing farm products with free or acceptable levels of chemical residue, and safe processing and storage of food products. (ASU)
9	Number of communities that establish community and container gardens to increase the availability of fresh and locally grown produce. (ASU)
10	Number of farmers and vendors that gain knowledge on Direct Marketing of Alternative Agriculture Enterprises. (ASU)
11	Number of participants that improve product handling and sanitation. (ASU)
12	Number of new technologies, crop production practices, or improved crop production systems developed. (MSU)
13	Number of new technologies, practices, production systems developed that enhance production, profitability or environmental stewardship. (MSU)
14	Percentage of farmers and producers that gain knowledge on Farm and Financial Management. (ASU)
15	Number of farmers and cooperatives that gain knowledge on the importance of developing and utilizing a marketing plan. (ASU)
16	Percentage of farmers and producers that keeps accurate records. (ASU)
17	Percentage of farmers and producers that reports minimizing land and farm loss. (ASU)
18	Percentage of farmers and producers that applies for farm loans. (ASU)
19	Percentage of farmers and producers that demonstrates minimizing risk on the farm. (ASU)
20	Number of farmers and vendors that report and demonstrate gained knowledge in Direct Marketing to Farmers Markets. (ASU)
21	Number of policies, decision support tools, and strategies developed that enhance profitability, inform production decision, and mitigate/manage risk. (MSU)

### **Outcome # 1**

#### **1. Outcome Target**

Clientele increase knowledge about recommended agricultural practices or behaviors. (MSU)

#### **2. Outcome Type : Change in Knowledge Outcome Measure**

#### **3. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Diseases and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems
- 402 - Engineering Systems and Equipment
- 502 - New and Improved Food Products
- 511 - New and Improved Non-Food Products and Processes
- 601 - Economics of Agricultural Production and Farm Management

#### **4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

### **Outcome # 2**

#### **1. Outcome Target**

Clientele implement recommended agricultural practices or behaviors. (MSU)

#### **2. Outcome Type : Change in Action Outcome Measure**

#### **3. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water

- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Diseases and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems
- 402 - Engineering Systems and Equipment
- 502 - New and Improved Food Products
- 511 - New and Improved Non-Food Products and Processes
- 601 - Economics of Agricultural Production and Farm Management

#### **4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

### **Outcome # 3**

#### **1. Outcome Target**

Clientele report enhanced agricultural productivity and/or profitability. (MSU)

#### **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
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Diseases and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems

- 402 - Engineering Systems and Equipment
- 502 - New and Improved Food Products
- 511 - New and Improved Non-Food Products and Processes
- 601 - Economics of Agricultural Production and Farm Management

#### **4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

#### **Outcome # 4**

##### **1. Outcome Target**

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

##### **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 # 5**

##### **1. Outcome Target**

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

##### **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 # 6**

**1. Outcome Target**

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

**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 # 7**

**1. Outcome Target**

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

**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 # 8**

#### **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. (ASU)

**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 # 9**

#### **1. Outcome Target**

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

**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 # 10**

#### **1. Outcome Target**

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

**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 participants that improve product handling and sanitation. (ASU)

**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 # 12**

**1. Outcome Target**

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

**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 - Diseases and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants

**4. Associated Institute Type(s)**

- 1862 Research

**Outcome # 13**

**1. Outcome Target**

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

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 402 - Engineering Systems and Equipment

**4. Associated Institute Type(s)**

- 1862 Research

**Outcome # 14**

**1. Outcome Target**

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

**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 # 15**

**1. Outcome Target**

Number of farmers and cooperatives that gain knowledge on the importance of developing and utilizing a marketing plan. (ASU)

**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 # 16**

**1. Outcome Target**

Percentage of farmers and producers that keeps accurate records. (ASU)

**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 # 17**

**1. Outcome Target**

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

**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

**4. Associated Institute Type(s)**

- 1890 Extension

**Outcome # 18**

**1. Outcome Target**

Percentage of farmers and producers that applies for farm loans. (ASU)

**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 # 19**

**1. Outcome Target**

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

**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

**4. Associated Institute Type(s)**

- 1890 Extension

**Outcome # 20**

**1. Outcome Target**

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

**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 # 21**

**1. Outcome Target**

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

**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

**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 2016, 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**

Natural Resources

#### **2. Brief summary about Planned Program**

The Agriculture planned program area combines three program areas at MSU (Environmental Systems and Sustainability, Forestry, and Wildlife and Fisheries). This planned program (MSU only) 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;
- 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
  - efforts in forestry, including forest production and management, forest recovery, timber harvesting, and environmental stewardship; and
  - wildlife habitat management, wildlife enterprise development, and management of human-wildlife conflicts.

This planned program is increasingly giving attention to sustainable energy and climate changes that affect Mississippi's natural resources.

**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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
101	Appraisal of Soil Resources	0%	0%	3%	0%
102	Soil, Plant, Water, Nutrient Relationships	4%	0%	46%	0%
104	Protect Soil from Harmful Effects of Natural Elements	0%	0%	2%	0%
111	Conservation and Efficient Use of Water	6%	0%	8%	0%
112	Watershed Protection and Management	4%	0%	5%	0%
121	Management of Range Resources	0%	0%	1%	0%
122	Management and Control of Forest and Range Fires	8%	0%	0%	0%
123	Management and Sustainability of Forest Resources	14%	0%	4%	0%
124	Urban Forestry	5%	0%	0%	0%
125	Agroforestry	6%	0%	0%	0%
132	Weather and Climate	6%	0%	1%	0%
133	Pollution Prevention and Mitigation	4%	0%	8%	0%
135	Aquatic and Terrestrial Wildlife	6%	0%	21%	0%
136	Conservation of Biological Diversity	4%	0%	1%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	4%	0%	0%	0%
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	8%	0%	0%	0%
216	Integrated Pest Management Systems	4%	0%	0%	0%
403	Waste Disposal, Recycling, and Reuse	5%	0%	0%	0%
405	Drainage and Irrigation Systems and Facilities	5%	0%	0%	0%
605	Natural Resource and Environmental Economics	7%	0%	0%	0%
	<b>Total</b>	100%	0%	100%	0%

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

Natural resources issues are focus areas of research and Extension education. Water conservation practices for agricultural crop production systems and the public are needed. Proper disposal of agricultural wastes, such as waste pesticides, solid wastes, and other waste products, are important

issues among agricultural producers. Research and education are targeted toward producers and other audiences to address water quality and environmental impacts associated with nutrient management and agricultural production.

Extension entomologists and researchers in integrated pest management (IPM) provide information to producers and consultants on scouting techniques, thresholds, identification, and pest biology. Public health IPM efforts are also needed given the prevalence of West Nile Virus, and Rocky Mountain spotted fever and other tick-borne diseases. Households need education on how to best avoid, manage, and/or control insect pests and plant diseases that adversely affect household members and their property.

Timber generally ranks as the first or second most valuable agricultural commodity in the state. MS has 18.6 million acres of forestland (over 62% of the state's land area). The total economic impact of forestry and the forest products industry is \$14.8 billion. Approximately 66% of the state's forestland is owned by private, nonindustrial forest landowners.

MS is also rich in wildlife and fisheries resources. Residents and nonresidents age 16 and over spent \$2.7 billion in 2014 in consumptive and non-consumptive wildlife-related recreation. Approximately 66,171 jobs exist within wildlife-related recreation. Most of MS is either privately owned, industrial forest, or agricultural land with potential for fish and wildlife production and management. Many landowners do not know how to manage their land properly for different species and need current research-based information. Opportunities for recreational experiences and/or revenue generation through wildlife/fisheries-related enterprises also exist.

Changes associated with increased urbanization, changing lifestyles, and greater demand for enjoyment of wildlife and fisheries resources have led to dilemmas in conservation issues and user conflicts. These dilemmas are 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, and ecosystem restoration and habitat management.

Development has also increased opportunities for human-wildlife conflicts. 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 are needed to conserve economic and ecological integrity of managed and natural systems.

## **2. Scope of the Program**

- Multistate Integrated Research and Extension

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

### **1. Assumptions made for the Program**

The first set of assumptions in this planned program area are that 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 and willing to implement strategies related to environmental systems and sustainability.

The second set of assumptions is related to forestry. 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.

The third set of assumptions is related to wildlife and fisheries. 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. Thus, 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 goals of this program are to:

- Change the practices of the general public and agricultural production practices for the sustainability of environmental systems; and
  - Increase the profitability of forest production and improve the environmental stewardship of landowners;
  - 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
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
2020	38.4	0.0	0.0	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:

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

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

- Development of best management practices to reduce nutrient and sediment transport in row crop and pasture systems,
- Watershed scale assessment of individual and cumulative effects of best management practices on nutrient and sediment transport and water quality,
- Development and evaluation of irrigation technologies that conserve water and energy, and
- 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:

- Development and evaluation of advanced plant materials that provide a renewable source of biomass for green energy production, and
- Development and evaluation of conversion technologies for producing advanced transportation fuels from renewable biomass and waste streams.

Research and Extension programming related to forestry will focus on:

- Forest production and management,
- Timber harvesting,
- Forest recovery, and
- Environmental impacts of forest practices.

In-state and multistate research and Extension activities will also 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**

<b>Direct Methods</b>	<b>Indirect Methods</b>
-----------------------	-------------------------

<ul style="list-style-type: none"><li>● Education Class</li><li>● Workshop</li><li>● Group Discussion</li><li>● One-on-One Intervention</li><li>● Demonstrations</li><li>● Other 1 (Interactive video)</li></ul>	<ul style="list-style-type: none"><li>● Public Service Announcement</li><li>● Newsletters</li><li>● eXtension web sites</li><li>● Web sites other than eXtension</li></ul>
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### 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; consumers; forest landowners; loggers; professional foresters; industry personnel; those who hunt, fish, and watch wildlife; those who interact with wildlife at work and home; those who work in related industries and professions; those who educate our youth (K-12); 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 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	Landowners, producers, and/or clientele increase their knowledge about responsible use and protection of natural resources and the environment. (MSU)
2	Landowners, producers, and/or clientele implement new sustainability practices based on Extension recommendations. (MSU)
3	Landowners, producers, and/or clientele improve their environmental stewardship. (MSU)
4	Number of new technologies, practices, production systems developed that enhance environmental stewardship while sustaining productivity and profitability. (MSU)
5	Number of new technologies, practices, productions systems developed that enhance forest productivity, environmental stewardship, and profitability. (MSU)
6	Number of new management practices, conservation systems, and policies developed that enhance wildlife conservation and environmental sustainability. (MSU)

### **Outcome # 1**

#### **1. Outcome Target**

Landowners, producers, and/or clientele increase their knowledge about responsible use and protection of natural resources and the environment. (MSU)

**2. Outcome Type** : Change in Knowledge Outcome Measure

#### **3. Associated Knowledge Area(s)**

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse
- 405 - Drainage and Irrigation Systems and Facilities
- 605 - Natural Resource and Environmental Economics

#### **4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

### **Outcome # 2**

#### **1. Outcome Target**

Landowners, producers, and/or clientele implement new sustainability practices based on Extension recommendations. (MSU)

**2. Outcome Type** : Change in Action Outcome Measure

### **3. Associated Knowledge Area(s)**

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse
- 405 - Drainage and Irrigation Systems and Facilities
- 605 - Natural Resource and Environmental Economics

### **4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

### **Outcome # 3**

#### **1. Outcome Target**

Landowners, producers, and/or clientele improve their environmental stewardship. (MSU)

#### **2. Outcome Type : Change in Condition Outcome Measure**

#### **3. Associated Knowledge Area(s)**

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water

- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse
- 405 - Drainage and Irrigation Systems and Facilities
- 605 - Natural Resource and Environmental Economics

#### **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. (MSU)

#### **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

### **Outcome # 5**

#### **1. Outcome Target**

Number of new technologies, practices, productions systems developed that enhance forest productivity, environmental stewardship, and profitability. (MSU)

**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

### **Outcome # 6**

#### **1. Outcome Target**

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

**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
- Public Policy changes
- 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 (i.e., competing programmatic challenges); potentially conflicting interests of stakeholders; and funding limitations. 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 affect outcomes.

## **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. Time series analyses will include production data for forest crops in MS, as well as wildlife population and harvest statistics for MS. Additionally, a standardized evaluation is available for use at any MSU Extension event or program.

In FY 2015, 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 planned program 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**

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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
602	Business Management, Finance, and Taxation	0%	25%	0%	20%
603	Market Economics	0%	25%	0%	30%
605	Natural Resource and Environmental Economics	0%	0%	41%	0%
608	Community Resource Planning and Development	25%	25%	2%	20%
609	Economic Theory and Methods	25%	25%	1%	30%
610	Domestic Policy Analysis	0%	0%	20%	0%
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 and Social Services	25%	0%	36%	0%
	<b>Total</b>	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 10-18.2%. Most (67 of 82) counties have per capita income of less than the state's average (approximately \$20,618), and 13 of those 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
2016	40.0	2.0	5.0	4.0
2017	40.0	2.0	5.0	4.0
2018	40.0	2.0	5.0	4.0
2019	40.0	2.0	5.0	4.0
2020	40.0	2.0	5.0	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**

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

**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)
- Plan, coordinate and conduct meetings and informational activities that will allow for an assessment of community needs in relationship to the services offered by Extension. (ASU)
- Promote the usage of electronic technology in the development of communities and local economies. (ASU)
- Conduct educational sessions and provide technical assistance on workforce, leadership and business/non-profit development. (ASU)
- Conduct or collaborate on educational sessions and provide technical assistance on home ownership, resource/funding opportunities, civic engagement. (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	Community leaders improving knowledge and skills. (MSU)
2	Community leaders make use of leadership skills by volunteering for community organizations. (MSU)
3	Community leaders implementing strategies to improve public decision-making and/or increase civic engagement. (MSU)
4	Percentage of participants improving their knowledge of extension services, and gaining skills and assistance in addressing identified community assets/issues. (ASU)
5	Increase in the amount of program information made available through Extension websites. (ASU)
6	Percentage of program participants that submit job application(s) and/or become employed. (ASU)
7	Percentage of program participants that submit application(s)/RFP(s) for funding and/or are funded. (ASU)
8	Number of program participants that gain awareness of home ownership opportunities. (ASU)
9	Number of program participants that demonstrate greater knowledge in the development of leadership skills, economic development strategies, and become more involved with civic activities. (ASU)

**Outcome # 1**

**1. Outcome Target**

Community leaders improving knowledge and skills. (MSU)

**2. Outcome Type : Change in Knowledge 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 and Social Services

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

Community leaders make use of leadership skills by volunteering for community organizations. (MSU)

**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 and Social Services

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

### **Outcome # 3**

#### **1. Outcome Target**

Community leaders implementing strategies to improve public decision-making and/or increase civic engagement. (MSU)

#### **2. Outcome Type : Change in Condition 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 and Social Services

#### **4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

### **Outcome # 4**

#### **1. Outcome Target**

Percentage of participants improving their knowledge of extension services, and gaining skills and assistance in addressing identified community assets/issues. (ASU)

#### **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 # 5**

**1. Outcome Target**

Increase in the amount of program information made available through Extension websites. (ASU)

**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

**Outcome # 6**

**1. Outcome Target**

Percentage of program participants that submit job application(s) and/or become employed. (ASU)

**2. Outcome Type :** Change in Action Outcome Measure

**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1890 Extension
- 1890 Research

**Outcome # 7**

**1. Outcome Target**

Percentage of program participants that submit application(s)/RFP(s) for funding and/or are funded. (ASU)

**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 # 8**

**1. Outcome Target**

Number of program participants that gain awareness of home ownership opportunities. (ASU)

**2. Outcome Type** : Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 603 - Market Economics
- 608 - Community Resource Planning and Development

**4. Associated Institute Type(s)**

- 1890 Extension
- 1890 Research

**Outcome # 9**

**1. Outcome Target**

Number of program participants that demonstrate greater knowledge in the development of leadership skills, economic development strategies, and become more involved with civic activities. (ASU)

**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

### **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 2016, 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 program 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 # 5**

**1. Name of the Planned Program**

4-H and Positive 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%
	<b>Total</b>	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 50th by the National Kids Count analysis of the status of children in 2014. Nearly 35% of MS children live in poverty, with 17% in extreme poverty (both higher than the national averages). Young children are particularly likely to live in low-income families. More than 39% 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
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
2020	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"><li>● Education Class</li><li>● Workshop</li><li>● Group Discussion</li><li>● One-on-One Intervention</li><li>● Demonstrations</li><li>● Other 1 (Regional youth summits)</li><li>● Other 2 (Summer camps &amp; mini-conferences)</li></ul>	<ul style="list-style-type: none"><li>● Public Service Announcement</li><li>● Billboards</li><li>● Newsletters</li><li>● TV Media Programs</li><li>● Web sites other than eXtension</li><li>● Other 1 (Fact sheets)</li></ul>
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### 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)
- 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, Citizenship Washington Focus, 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)
- Increase number of limited resource youth to utilize their skills to analyze their financial well-being and make effective financial management decisions. (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	Youth increase their knowledge in subject-matter areas. (MSU)
2	Youth improve life skills. (MSU)
3	Youth increase their involvement in 4-H leadership events and activities at the district, state, and national levels. (MSU)
4	Number of youth that report reduction of risky behavior that benefits his/her social and educational development. (ASU)
5	Number of minority youth that independently select to participate in leadership competitions, youth events, activities, and community projects. (ASU)
6	Number of trained volunteer leaders that independently organize and manage school and community youth clubs. (ASU)
7	Number of youth that report seeking and gaining employment based on training and guidance provided by the 4-H program on financial well-being. (ASU)
8	Number of youth that participate in science, engineering, and technology programs. (ASU)
9	Number of youth that participate in career/workforce development program to prepare for the future. (ASU)

**Outcome # 1**

**1. Outcome Target**

Youth increase their knowledge in subject-matter areas. (MSU)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Youth improve life skills. (MSU)

**2. Outcome Type :** Change in Action Outcome Measure

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Youth increase their involvement in 4-H leadership events and activities at the district, state, and national levels. (MSU)

**2. Outcome Type :** Change in Condition 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 that report reduction of risky behavior that benefits his/her social and educational development. (ASU)

**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 # 5**

**1. Outcome Target**

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

**2. Outcome Type :** Change in Action Outcome Measure

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1890 Extension

**Outcome # 6**

**1. Outcome Target**

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

**2. Outcome Type :** Change in Action Outcome Measure

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1890 Extension

**Outcome # 7**

**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. (ASU)

**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 youth that participate in science, engineering, and technology programs. (ASU)

**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 participate in career/workforce development program to prepare for the future. (ASU)

**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 is available for use at any MSU Extension event or program. 4-H Common Measures will also be utilized as appropriate.

In FY 2016, 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 program 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 # 6**

#### **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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
701	Nutrient Composition of Food	0%	0%	1%	0%
703	Nutrition Education and Behavior	20%	20%	1%	0%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	5%	0%	3%	0%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	5%	0%	35%	0%
722	Zoonotic Diseases and Parasites Affecting Humans	0%	0%	1%	0%
723	Hazards to Human Health and Safety	0%	0%	8%	0%
724	Healthy Lifestyle	25%	20%	1%	0%
801	Individual and Family Resource Management	15%	15%	1%	0%
802	Human Development and Family Well-Being	30%	20%	34%	0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%	0%	11%	0%
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	0%	0%	1%	0%
806	Youth Development	0%	25%	0%	0%
903	Communication, Education, and Information Delivery	0%	0%	3%	0%
	<b>Total</b>	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
2016	39.9	6.0	11.0	0.0
2017	39.9	6.0	11.0	0.0
2018	39.9	6.0	11.0	0.0
2019	39.9	6.0	11.0	0.0
2020	39.9	6.0	11.0	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
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<ul style="list-style-type: none"><li>● Education Class</li><li>● Workshop</li><li>● Group Discussion</li><li>● One-on-One Intervention</li><li>● Demonstrations</li><li>● Other 1 (Regional youth summits)</li><li>● Other 2 (Conferences)</li></ul>	<ul style="list-style-type: none"><li>● Public Service Announcement</li><li>● Newsletters</li><li>● TV Media Programs</li><li>● Web sites other than eXtension</li><li>● Other 1 (Fact sheets)</li></ul>
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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	Individuals and/or families increase their knowledge about health or child/family well-being. (MSU)
2	Individuals and/or families report changes in behavior to improve health or child/family well-being. (MSU)
3	Individuals and/or families report improved health or child/family well-being. (MSU)
4	Number of clientele (limited access to fresh fruit and vegetables) that report increase in access to healthy food and vegetables as the main sources of their everyday diets. (ASU)
5	Number of clientele (limited access to exercise equipment and facilities) that report positive changes in physical activity, decreased caloric intake, and behavior changes connected to adoption of new recommendations on how to prepare healthier meals. (ASU)
6	Number of limited-resource families and youth that report using better healthy eating practices and increased physical activity to manage obesity, weight, and health-related diseases. (ASU)
7	Percentage of participants that utilized knowledge gained and made adjustments in their nutrition and lifestyle behaviors. (ASU)
8	Number of limited-resource participants that demonstrate the adoption of effective parenting practices to improve parent/child relationships. (ASU)
9	Number of limited-resource families and youth that report using learned skills to analyze their financial well-being and make effective financial management decisions. (ASU)
10	Number of new technologies developed that enhance food safety and nutritional quality. (ASU)

**Outcome # 1**

**1. Outcome Target**

Individuals and/or families increase their knowledge about health or child/family well-being. (MSU)

**2. Outcome Type : Change in Knowledge Outcome Measure**

**3. Associated Knowledge Area(s)**

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 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
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle
- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

Individuals and/or families report changes in behavior to improve health or child/family well-being. (MSU)

**2. Outcome Type : Change in Action Outcome Measure**

**3. Associated Knowledge Area(s)**

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 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
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 3**

**1. Outcome Target**

Individuals and/or families report improved health or child/family well-being. (MSU)

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 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
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle
- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 4**

**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.(ASU)

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 724 - Healthy Lifestyle
- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1890 Extension

**Outcome # 5**

**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. (ASU)

**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 # 6**

**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. (ASU)

**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 # 7**

**1. Outcome Target**

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

**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 # 8**

**1. Outcome Target**

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

**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 # 9**

**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. (ASU)

**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 # 10**

**1. Outcome Target**

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

**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 health or child/family well-being. 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 2016, 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 program 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.