2007 University of Arkansas Combined Research and Extension Plan of Work

Brief Summary about Plan of Work

Arkansas is a rich state in terms of natural resources. Agriculture is one of the largest industries having an economic impact of over $13 billion or over one-fifth of the Gross State Product. Agriculture accounts for about one in five jobs and an annual payroll of between $8 and $9 billion. Agriculture consists of agronomic and horticultural crops, animal agriculture and forestry. Over one-half of Arkansas is in forests much of which is owned by private landowners. Food processing adds much value to the commodities grown in the state.

Arkansas is the nation's largest rice producer, one of the top producers of poultry and consistently one of the top producers of cotton and soybeans. The diversity of Arkansas Agriculture includes fruits, vegetables, beef and dairy, broilers and eggs, corn, wheat, and many other crops.

The Division of Agriculture develops fundamental and applied research and extension programs to address the production, environmental and economic sustainability of Arkansas agriculture and the farms, farm families, and allied agricultural industries that depend on agriculture production and associated jobs.

Arkansas, though a major agriculture state, has issues similar to that of the remainder of the U.S. Arkansas must address issues such as rapid growth and declining populations, health and nutrition, unemployment, one-parent families, biosecurity, and many other economic and societal challenges facing families and communities. The University of Arkansas Division of Agriculture Plan of Work addresses many of these issues in both research and extension education. The Division's administration and faculty have committed time and resources from federal, state, county, city, and private sources and volunteers to address these many issues. The issues are broad and so are the planned programs. The approach is through careful planning and the involvement of partners, volunteers, constituents, and local, state and national leaders. Specific programs include efficient and sustainable agricultural production, protecting the natural resources, providing a safe and secure food supply, developing leaders, sustaining communities, workforce preparation, parenting skills, youth development and many more.

Estimated number of professional FTEs/SYs total in the State.

Year	Extenion		Research	
	1862	1890	1862	1890
2007	389.0	0.0	121.0	0.0
2008	389.0	0.0	121.0	0.0
2009	389.0	0.0	121.0	0.0
2010	389.0	0.0	121.0	0.0
2011	389.0	0.0	121.0	0.0

Merit Review Process

The merit review process that will be employed during the 5-Year Plan of Work cycle

- Internal University Panel
- External University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Expert Peer Review

Brief explanation

Programs go through a three-tiered review process:
1. Stakeholder program identification and review
2. Administrative approval and review
3. External review

Stakeholder Program Identification and Review

Stakeholder input into program identification and review is derived from both formal and informal means for all program areas. Public comment on current and future research programs are obtained from county and community meetings, commodity and community associations, commodity check-off boards, state legislative committees and open public forums concerning specific issues. Open public meetings, field days and county and regional production meetings provide forums for stakeholder input open to under-served or under-represented individuals, groups or organizations. For extension, county councils and advisory groups meet annually at a minimum to provide input, feedback and/or review of program implementation, redirection, or newly identified needs. Members of these groups are invited to participate in programs, field days, special tours, workshops and conferences throughout the year and for the duration of the program. All reviews of research and extension programs include a stakeholder member or members of the community or industry most influenced by the program area. Open public forums are held to address specific issues of importance to the stakeholder community or industry.

Administrative Approval and Review

Identified planed program areas of research or extension activity are administratively reviewed and approved by the Director of the Agricultural Experiment Station or Cooperative Extension Service, as appropriate, within the context of the Division of Agriculture's Strategic Plan and the specific needs identified by stakeholder groups. Smith-Lever, Hatch, McIntire-Stennis, Animal Health and regional research projects are administratively reviewed and approved by the subject matter department head and the director of the Arkansas Agricultural Experiment Station. All research projects are reviewed by three outside scientists prior to submission to the respective subject matter department head and the experiment station.

External Review

Merit review is conducted as part of Division of Agriculture's on-going program review process. The reviews may be departmental or programmatic and cut across departments. Reviews are scheduled on a five to seven year cycle and conducted concurrently for research, extension and instruction. All reviews are conducted by a team of recognized outside research, extension and teaching professionals balanced to reflect the programmatic needs and diversity. All reviews include one or more stakeholders. The actual review process involves a period of self study, followed by program assessment and bench marking. The review team evaluates the programs effectiveness relative to the stated mission and goals of the department or program as well as the need of stakeholders. Following the outside review teams written evaluation, the department or program prepares a response to the review. The Division of Agriculture and University administration then meet with the department or program faculty one more time to develop a plan for implementing changes. Thereafter, annual progress is reported to Division and University administration.

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 University of Arkansas Division of Agriculture has utilized both formal and informal mechanisms for ensuring the planned program areas address areas of strategic importance to the state. Each planned program was identified based on the needs identified in a series of regional and statewide listening sessions of current and potential stakeholders representing the diversity of the population in the regions and state. Stakeholders of specific programs such as Community Health, 4-H and Youth, and commodity groups, research and extension faculty and staff also identify needed programs and in some cases provide partial funding to support. Single issue meetings are held as needed to address emerging issues to craft additional program areas if needed to promptly address the problem.

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

The Southern Region SARE program is conducted as a comprehensive program incorporated into many of the Extension programs within Arkansas. Some efforts include the SARE Program Resources / Grant Funding Opportunities Training for county agents statewide, training for Small Farm Managers in Vegetable Production and Marketing, and training on Farm Support Program Availability and Access for county agents, small farm program specialists, farmers, and community leaders in South and Central Arkansas. Meat Goat Industry Tour – the purpose of this tour was to educate Extension agents on the management of larger goat producers with emphasis on forage production and parasite control and management of elite replacement operations. This group represents both majority and minority audiences and addresses a niche market. The growers generally have very small or moderate sized operations. The 13-state Southern Region 4-H programs are participating in a program working with rural audiences building youth adult partnerships to enhance their local communities. A grant helps to support this program. Another multi-state program is Operation Military Kids. It targets youth in suddenly deployed military families (Guard and Reserve).

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

Planned programs have identified specific outputs and short, medium and long-term outcomes for the life of the programs. Program data will be entered by all CES faculty through a web-based data management system, and aggregated to identify the outcomes and impacts. Qualitative data and case studies will likewise be entered into the CES web-based system, in order to produce a comprehensive understanding of the program outcomes.

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

Planned programs have identified target audiences, program methods, and output and outcome measures prior to program initiation. The use of the planned program (input) elements and the faculty POW process allows faculty to identify which audiences, methods, curriculum, etc. county faculty have identified as the focus of their work each October (at the beginning of each fiscal year). This planning information allows specialists to better focus their program support efforts by understanding the scope of work for each planned program, allowing increased and timely responsiveness to specific county needs. Through the use of output and outcome indicators, uniform data collection methods, and the live web-based data base, process improvement is possible throughout the fiscal year due to the compilation of program specific data. Identification of best practices, innovative approaches, and emerging issues over the life of the program can both inform research and provide guidance for other educational resource investments.

Stakeholder Input

1. Actions taken to seek stakeholder input that encourages their participation (Check all that apply)

- 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
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals
- Survey of selected individuals from the general public
- Other (County Council planning meetings.)

Brief explanation.

Stakeholder input into program identification and review is derived from both formal and informal means for all program areas. Public comment on current and future research programs is obtained from county and community meetings, commodity and community associations, commodity check-off boards, state legislative committees and open public forums concerning specific issues. Open public meetings, field days and county and regional production meetings provide forums for stakeholder input open to under-served or under-represented individuals, groups or organizations. For extension, county councils and advisory groups meet annually at a minimum to provide input, feedback and/or review of program implementation, redirection, or newly identified needs. Members of these groups are invited to participate in programs, field days, special tours, workshops and conferences throughout the year and for the duration of the program. All reviews of research and extension programs include a stakeholder member or members of the community or industry most influenced by the program area. Open public forums are held to address specific issues of importance to the stakeholder community or industry.

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 Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief explanation.

Participants in the University of Arkansas Division of Agriculture stakeholder sessions were identified by Arkansas Experiment Station faculty and administrators and by asking county Extension staffs to identify individuals in their local communities who were representative of one or more of the following fifteen stakeholder categories: county services (e.g., DHS, Food Bank or Pantry); financial sector (e.g., banks, agricultural lending, investments); faith-based sector (e.g., church, youth minister); education (public, private, vocational); commercial sector (e.g., chambers of commerce, industry); health (e.g., hospital, public health, doctor); agricultural production; agricultural businesses; county Extension council; 4-H program (e.g., leader, teen, alumni, foundation); government official (e.g., county, city); Extension homemaker;

natural resources (e.g., wildlife, forestry, conservation); media (e.g., radio, newspaper, television); and youth services (e.g., community center, youth organizations). In addition to these criteria, Extension staffs were also asked to identify individuals within the fifteen categories who were representative of the racial make-up of the counties, to include individuals of both genders, and to identify potential participants by their level of involvement in Division of Agriculture Extension programs in the county (i.e., low, moderate, high).

2(B). 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. Methods for collecting Stakeholder Input

- {NO DATA ENTERED}

Brief explanation

The University of Arkansas Division of Agriculture's 2005-2010 Strategic Plan was developed with the input of over 600 stakeholders from across the State of Arkansas. These individuals included external stakeholders who participated in sixteen strategic planning listening held across the state. Division of Agriculture faculty and staff were also included in the strategic planning process through a web-based survey and participation on strategic plan writing teams.

Arkansas Extension has operational, county-specific advisory councils for each of our 75 counties. Each County Council is comprised of local elected officials and stakeholders representing agriculture, youth, family, and consumer science interests. Each county council annually evaluates the results of Extension programs through formal program reviews, and provides input into program planning for the next fiscal year. Formal presentations of program results are made by Extension faculty to guide this process. This focused evaluation and planning process is conducted from June-August of each year.

3. A statement of how the input will be considered

- To Identify Emerging Issues
- Redirect Extension Programs
- To Set Priorities
- Other (Strategic Planning)

Brief explanation.

Division of Agriculture state specialists and research faculty members serve on advisory committees and work regularly with diverse stakeholder groups, including Farm Bureau, commodity promotion boards, state agency and regulatory groups, and program specific advisory groups to assist in the evaluation of current efforts and to provide feedback related to Arkansas' changing needs. Meetings are likewise conducted with internal stakeholders including county faculty, district administrators, and experiment station scientists to identify stakeholders and facilitate linkages between local needs and research priorities.

Planned Program Table of Content

1. Name of the Planned Program

Agricultural & Food Biosecurity

2. Program knowledge areas

- 311 25% Animal Diseases
- 712 25% Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxi
- 212 50% Pathogens and Nematodes Affecting Plants

3. Program existence : Intermediate (One to five years)

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

5. Brief summary about Planned Program

The University of Arkansas Division of Agriculture provides unbiased research-based information and technical assistance on topics related to biosecurity and bioterrorism. Information is disseminated focusing on the needs of consumers, the general public and livestock and row crop producers. In response to potential attacks on the safety of the nation's food supply, the UA Division of Agriculture extension and research faculty work collaboratively with industry leaders involved in animal agriculture, to assume a leading role in raising biosecurity awareness. Grain, processed ingredients, animal feed, pet food and their delivery vehicles all serve as potential vectors for intentional contamination, resulting in injury to humans and animals.

Animal biosecurity programming efforts are focused on reducing the disease threat in poultry and livestock operations. Producer/Grower education is provided by faculty to improve biosecurity through proper methods of sanitation, disease prevention, recognition and control in animal production facilities. Disease detection education and consultation is also provided to livestock inspectors, state disease regulatory personnel, state/federal veterinarians, veterinarians in private practice, and poultry company personnel. Monitoring of flock and herd health status is facilitated through diagnostic medicine, surveys and testing through the diagnostic lab.

The Arkansas Soybean Rust Program was initiated in November 2004, in response to the discovery of Asian soybean rust in the state. The program involves soybean agronomists, plant pathologists, county agents, regulatory and industry personnel.

The Cooperative Extension Service administers the Plant Health Clinic (near Lonoke, AR) and the Plant Nematology Diagnostic Clinic (near Hope, AR). The PHC near Lonoke is a triage lab for the state and a member of the Southern Pest Detection Network. The Clinic not only provides routine diagnoses used in crop and plant protection, but serves as an early detection facility for new, exotic or emerging problems. Records are shared with the National Pest Detection Network. Observations are used to support research and education efforts, to guide new research focus areas as need, and to support regulatory entities such as APHIS, FGIS, and the Plant Board.

Technical and educational resources are provided for communities, groups and/or individuals who have become victims or need resources to minimize the impact of terrorism or natural disasters. Multi-disciplinary training and technical assistance is available through extension faculty related to source water contamination, grain handling and storage security, agriculture aviation security, farm security planning, disease prevention, food safety, emergency preparedness and disaster response practices.

6. Situation and priorities

Biosecurity research and educational outreach is critical to the sustainability of Arkansas agriculture, the public health, and our state economy. Biosecurity research and educational programming requires an integrated approach, working with state and federal agencies, regulatory officials and policy makers in a partnership to analyze and manage risks in the sectors of food safety, animal life and health, plant life and public health. Through research and educational outreach, Division of Agriculture faculty work with the general public, state/federal agency personnel, consumers, growers/producers and allied industry personnel to promote biosecurity risk management planning and prevention practices designed to reduce/prevent the spread and movement of infectious diseases.

Accurate and timely diagnosis is fundamental to animal and plant protection and crop biosecurity. Infectious diseases introduced onto a farm operation can have a devastating effect on cash flow and equity. Diseases cost the Arkansas poultry industry an estimated 10% of the total bird value each year. In Arkansas this means that diseases may cost the industry as much as $230 million a year. Severe disease outbreaks such as the 1983-1984 avian influenza outbreaks in Pennsylvania resulted in the eradication of over 17 million birds, at a cost of over $65 million dollars to that state.

Asian soybean rust (ASBR) entered the United States, including Arkansas, in late 2004 and has successfully wintered in Florida since. ASBR infected soybean crops in several southeastern U.S. states during 2005 but was largely contained by a near record drought system in the Mississippi River Valley. The pathogen did become established in Texas and Mexico during late 2005, increasing the risk for a major epidemic in 2006 and subsequent years for Arkansas and the Midwest. This disease is capable of severely crippling the Arkansas and U.S. soybean industry because there are no resistant cultivars or cultural management techniques available. Fungicides will be the only control option for several years and their use is largely guesswork under U.S. conditions, since local efficacy and timing data are unavailable.

There are also many pathogens and pests of soybean that are not in the United States yet, so monitoring of the soybean crop for existing

and potentially exotic pests is a meaningful crop biosecurity measure. The Arkansas Nematode Diagnostic Laboratory provides nematode identification and assessment of risk across all crops and commodities produced in the state. The importance of crop monitoring for biosecurity purposes has increased with the increase in globalization of agriculture and the resulting movement of products into the United States from other countries. A single introduction of a new pest or pest strain could result in millions of lost dollars in income, higher prices to consumers, and interruptions in the marketplace.

7. Assumptions made for the Program

Biosecurity policy, protocols, and practices are critical to the health of Arkansas' citizens and the state economy. Biosecurity can be difficult to maintain because of the very complex interrelationship between pathogens, management and biosecurity. While developing and implementing biosecurity is difficult, it is the cheapest, most effective method of disease control available, and no disease prevention program will work without it. Everyone is at risk for food-borne illnesses-diseases caused by pathogens or toxins ingested with food. Contamination of our food supply, both domestic and imported is a growing concern. Increased collaboration with regulatory officials, state health officials, policy-makers, growers/producers, and the general public is a key strategy for maximizing key resources for an effective biosecurity strategy and plan. Research, education and outreach must be integrated for effective public policy development, implementation planning, and impact assessment.

Biosecurity risk assessment, animal and plant diagnostics, and improved surveillance are key technologies in biosecurity.

8. Ultimate goal(s) of this Program

« To improve animal biosecurity and reduce the risk of a disease threat in poultry and livestock operations

« To improve the security of plant health through early identification and management of invasive plant pathogens and nematodes

« To improve consumer/general public biosecurity through education to prevent food born and infectious disease in response to natural disasters or terrorism

9. Scope of Program

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

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	2.0	0.0	0.0	0.0
2008	2.0	0.0	0.0	0.0
2009	2.0	0.0	0.0	0.0
2010	2.0	0.0	0.0	0.0
2011	2.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Individual consultations
Workshops
Farm visits
Field Days
Sentinel Plots
Spore Traps
Interviews
Source water contamination training
Disease detection and prevention training
Food Safety Training
Diagnosis training
Diagnostic Visits
Plant & Animal Diagnostic Testing
Disaster relief training
Emergency preparedness training
Grain Handling & Storage Industry security training
Production of education materials
Mass Media (print, radio, TV)
Newsletters & Direct Mailing
Scientific symposia & technical conferences for industry personnel to determine flock or herd health status
Collaborative planning meetings with state/federal agencies and regulatory officials

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

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Diagnostic Testing) • Other 2 (Diagnostic Farm Visits)	• Newsletters • TV Media Programs • Web sites • Other 1 (Sentinel Plots/Spore Traps) • Other 2 (Scientific Symposia/Technical Co)

15. Description of targeted audience

Soybean producers
Crop consultants
Dealer personnel
Pesticide applicators
Livestock Company Personnel
Poultry Company Personnel
Poultry Growers
Elected Officials
First Responders
Grain Handling & Storage Industry
State Agency Personnel
State/Federal Regulatory Personnel
Agribusiness
Division of Agriculture personnel
National Agency Personnel (APHIS, SPDN, NPDN, NAPIS, SRIPMC)

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	4000	9000	0	0
2008	4500	9500	0	0
2009	4500	10000	0	0
2010	5000	12000	0	0
2011	5500	15000	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

18. Output measures

Output Target

Number clientele trained on biosecurity

2007: 800 2008: 800 2009: 800 2010: 800 2011: 800

Output Target

Number of educational materials developed on biosecurity

2007: 10 2008: 10 2009: 10 2010: 5 2011: 5

Output Target

Number newsletters & fact sheets disseminated to clientele regarding biosecurity

2007: 3600 2008: 3600 2009: 3600 2010: 3600 2011: 3600

Output Target

Number of producers interviewed/surveyed

2007: 100 2008: 100 2009: 100 2010: 100 2011: 100

Output Target

Number of soybean sentinel plots

2007: 20 2008: 20 2009: 20 2010: 20 2011: 20

Output Target

Number of spore trap slides

2007: 11 2008: 11 2009: 11 2010: 11 2011: 11

Output Target

Number of Hits to CES Website regarding avian biosecurity

2007: 500 2008: 500 2009: 500 2010: 500 2011: 500

Output Target

Number of Hits to CES Website regarding livestock biosecurity

2007: 250 2008: 250 2009: 250 2010: 250 2011: 250

Output Target

Number of Soybean monitoring sites visits

2007: 1000 2008: 1000 2009: 1000 2010: 1000 2011: 1000

Output Target

Number of Kudzu monitoring sites visits

2007: 80 2008: 80 2009: 80 2010: 80 2011: 80

Output Target

Number of requested consultations related to exotic animal disease concerns (Livestock & Poultry)

2007: 130 2008: 140 2009: 150 2010: 150 2011: 150

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of growers/producers reporting increased awareness of need for biosecurity

Outcome Type: Short

2007: 350 2008: 350 2009: 350 2010: 350 2011: 350

Outcome Target

Number of growers/producers reporting knowledge gained related to biosecurity practices

Outcome Type: Short

2007: 350 2008: 350 2009: 350 2010: 350 2011: 350

Outcome Target

Number of growers/producers reporting intent to adopt new biosecurity practices for animal production facilities

Outcome Type: Short

2007: 350 2008: 350 2009: 350 2010: 350 2011: 350

Outcome Target

Number of growers/producers adopting new practices outlined in educational programs to improve biosecurity through proper methods of sanitation; disease prevention, recognition, and control

Outcome Type: Medium

2007: 300 2008: 300 2009: 300 2010: 300 2011: 300

Outcome Target

Number of Diagnostic invasive plant disease samples

Outcome Type: Medium

2007: 2000 2008: 2000 2009: 2000 2010: 2000 2011: 2000

Outcome Target
Number of Diagnostic invasive nematode samples

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
3500	3500	3500	3500	3500

Outcome Target
Number of avian grower referrals to diagnostic labs for exotic animal disease testing

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
250	250	300	300	300

Outcome Target
Number of Section 18 Fungicides approved

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
1	1	1	1	1

Outcome Target
Number Asian Soybean Rust Positive samples

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
20	20	20	20	20

Outcome Target
Number of SOD Positive samples

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
5	5	5	5	5

Outcome Target
Number of Bakanae Positive samples

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
0	0	0	0	0

Outcome Target
Number of Pathogens/nematodes (other) Positive samples

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
2000	2000	2000	2000	2000

Outcome Target
Number of reported Avian LT disease outbreaks

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
200	200	200	200	200

Outcome Target
Number of reported Avian MG disease outbreaks

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
5	5	5	5	5

Outcome Target
Number of reported Avian MS disease outbreaks

Outcome Type: Long

2007:	10	2008:	10	2009:	10	2010:	10	2011:	10

20. External factors which may affect outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Other (Animal Disease Outbreak, Human E)

Description
{NO DATA ENTERED}

21. Evaluation studies planned

- After Only (post program)
- During (during program)
- Other (Use of Secondary Data)

Description
{NO DATA ENTERED}

22. Data Collection Methods

- Sampling
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Observation
- Tests

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Agricultural Systems

2. Program knowledge areas

- 401 5% Structures, Facilities, and General Purpose Farm Supplies
- 134 5% Outdoor Recreation
- 601 5% Economics of Agricultural Production and Farm Management
- 403 40% Waste Disposal, Recycling, and Reuse
- 141 5% Air Resource Protection and Management
- 133 5% Pollution Prevention and Mitigation
- 605 5% Natural Resource and Environmental Economics
- 112 25% Watershed Protection and Management
- 604 5% Marketing and Distribution Practices

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

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

5. Brief summary about Planned Program

The Alternative Agricultural Enterprises program educates producers about non-traditional practices with the potential for providing supplemental income to their farming operation. Sometimes alternative enterprises become the primary farm income once an understanding of business management and profitability is achieved. This program promotes sustainable management practices for alternative enterprises. It requires input and collaboration from experts in diverse fields such as animal science, forestry, natural resources, agriculture policy and law, and agricultural economics and marketing. Examples of alternative enterprises are pen-raised game birds, pine straw, shiitake mushrooms, herb production, small livestock (e.g., goats, rabbits, backyard chickens), and wildlife-recreation/fee fishing enterprises. Landowners are provided information about alternatives and are encouraged to design a business plan as a decision-making tool for determining whether to invest in its establishment.

Research indicates only 1% to 5% of those who attend workshops about enterprises actually establish one. The decision to NOT pursue an alternative agricultural enterprise is as meaningful as deciding to establish one. Potential losses of time and financial resources are averted. Educated participants are expected to make informed decisions about whether or not to start an alternative agricultural enterprise. Therefore long-term outcomes indicating only the number who successfully establish an enterprise do not accurately reflect program success. Early- and medium-term outcomes indicating a lack of establishing enterprises can also be considered evidence of a successful education effort.

Since 1993, all Arkansas producers with confined animal feeding operations that use liquid manure handling systems (regardless of size) are required to obtain a permit for manure handling. Permit elements include nutrient management, specified application sites, maximum application rates, annual training for owner/operators and annual reporting requirements.
In contrast, Arkansas livestock and poultry producers with dry manure systems have been encouraged by state and federal agencies to voluntarily comply with appropriate manure management BMPs, and to attend Extension's environmental education programs. A special effort is made by state and federal agencies and poultry integrators to encourage poultry producers to develop and follow a nutrient management plan for their farms.

Recently, the regulatory requirements are in the process of changing with the revision of the EPA Concentrated Animal Feeding Operation regulations that have been proposed. In addition there are new state laws that regulate the utilization of nutrients, both manure and commercial fertilizers, in certain sensitive water sheds in the northern and western tier of Arkansas counties. A significant effort has been implemented and will continue to address the educational needs of the nutrient applicators and nutrient management plan writers. Since the regulations address Nitrogen and Phosphorus nutrient applications from all sources, including manures and commercial fertilizers, and all uses, including agricultural, residential, and turf grass. Only a portion of this effort and its impact is reported under this plan. Work in the area of air quality concerns associated with particulate, chemical, odor emissions from confined livestock operations is increasing. This effort focus on dry poultry production facilities with supplemental work on livestock farms with liquid systems. Existing educational programs and new programs will be utilized to provide information to livestock and poultry producers.

6. Situation and priorities

Given current economic conditions, many agricultural producers and private landowners seek ways to generate income from their land. In Arkansas, it is not unreasonable for a landowner to lease a duck blind for $2000 during the waterfowl season. The Arkansas recreational fishing industry has an economic impact of over $440 million/yr. Improved economic conditions of some rural communities in the south have been attributed to income generated from alternative agricultural enterprises. However, these enterprises are not for everyone. This program helps landowners decide whether to invest in alternative agricultural enterprises through designing enterprise management plans, contracts and leases, and marketing strategies. Experts in the University of Arkansas System are available to provide basic information about content areas to help the landowner get started in his or her interest in alternative agricultural enterprises.

Arkansas has 1,750,000 head of cattle of which 24,000 are dairy cattle. There are 330,000 head of swine placed at one time. Annual broiler production is 1.2 billion birds. Turkey production is 22.5 million birds annually. Annual Arkansas farm gate income from livestock and poultry is $4.2 billion (63%) of the states $6.6 billion total farm cash receipts before support services, industry or further processing are added. (Information from USDA- Agricultural Statistics Service, Arkansas. http://www.nass.usda.gov/ar/)

A 1997 study indicated that animal production in Arkansas generated approximately 3.4 billion tons of manure on a dry weight basis each year. Annually the beef cattle, poultry, swine and dairy industries generated about 1.8, 1.3, 0.1 and 0.2 billion tons of manure, respectively. Given the increase in livestock production since 1997 the annual manure production will have also increased over the last decade.

The combination of increasing manure production, the vital economic importance of livestock agriculture, and an increasing non-agriculture population in traditionally rural areas is leading to an increase in both the perception and reality of potential environmental concerns. It is also leading to the necessity of changes in the way livestock housing and manure systems will need to be designed and managed. As a result there is a need to encourage changes to existing facilities and management systems. In addition there is a need to encourage new facilities to be designed and managed to address the concerns. Of course, economic concerns will tend to hinder these changes.

7. Assumptions made for the Program

Given current trends in declining numbers of farms, part-time and hobby farmers, specialized farming, and the globalization of agriculture, producers continually seek new and innovative ways to generate farm income. Identifying niche markets and capitalizing on specialized agricultural opportunities is a matter of economic survival for many agricultural producers.

Extension is strategically-placed as agricultural educators with access to experts and researchers in diverse fields throughout the University of Arkansas System.

« It is economically vital to Arkansas to maintain a strong livestock industry.
« It is also critical to protect water and air quality.
« Regulations and court action will impose restrictions on manure management options.
« Neighbor/Community perceptions must be considered in conjunction with planned agricultural practices.
« The classic “personal property rights vs. public good” situation will require a blend of science, economics, legal, community relations, and compromises to address.
« While there are similarities in the various livestock and poultry operations each farm is unique and will have unique solutions.
« The root cause of the manure nutrient problem is typically more nutrients enter the confined animal farms as feed than leave as animal products.
« To ultimately solve this problem economically viable alternative higher value uses of animal manure must be found.
« For both water quality and air quality issues proper management of both existing and future systems will be critical.
« There must be research, new options, economic incentives, and legal flexibility to enable operational changes to address environmental concerns.
« Education regarding community perceptions and concerns, in concert with the transfer of agricultural system information and technology, is critical in order to support landowner planning and implementation of production system options.

8. Ultimate goal(s) of this Program

The ultimate goal of this program is to keep farmers in business and landowners in ownership of their property using sustainable land management practices to improve rural economies in Arkansas.

This is accomplished by:

« Educating producers enabling them to make informed decisions about whether or not to establish an alternative agricultural enterprise.
« Assisting in maintaining the economic viability of the livestock industry with its associated livelihoods of the individuals involved with animal based food production.
« Assisting landowners to manage and minimized the adverse environmental impacts of livestock production.

9. Scope of Program

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

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	8.0	0.0	0.0	0.0
2008	8.0	0.0	0.0	0.0
2009	8.0	0.0	0.0	0.0
2010	8.0	0.0	0.0	0.0
2011	8.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

A broad range of direct and indirect methods will be used to provide information to both groups and individuals:

Educational meetings
Tours
Field days
Workshops
Farm visits
Articles and media interviews in publications targeting agricultural producers and private landowners

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

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Letters/Correspondence)	• Newsletters • Web sites • Other 1 (Web-based Education) • Other 2 (Print/Radio Interviews)

15. Description of targeted audience

Agricultural producers
Consultants
Livestock company personnel
Non-farm private landowners
Aquaculture producers
Governmental Agency Personnel
Service providers (involved with animal manure management & environmental Issues)
General Public

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	3700	5000	0	0
2008	3700	5000	0	0
2009	3700	5000	0	0
2010	3700	5000	0	0
2011	3700	5000	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

18. Output measures

Output Target

Number educational meetings and workshops

2007: 35 2008: 35 2009: 35 2010: 35 2011: 35

Output Target

Number educational field days

2007: 10 2008: 10 2009: 10 2010: 10 2011: 10

Output Target

Number of farm visits and demonstrations

2007: 35 2008: 35 2009: 35 2010: 35 2011: 35

Output Target

Number of individuals receiving information at Educational Meetings and workshops

2007: 1500 2008: 1500 2009: 1500 2010: 1500 2011: 1500

Output Target

Number of individuals receiving information from farm visits, demonstrations and/or individual consultation

2007: 1000 2008: 1000 2009: 1000 2010: 1000 2011: 1000

Output Target

Number of individuals receiving information at Field Days

2007: 300 2008: 300 2009: 300 2010: 300 2011: 300

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target
Number of clientele who reported knowledge gained

Outcome Type: Short

2007:	500	2008:	500	2009:	500	2010:	500	2011:	500

Outcome Target
Number of clientele who adopted new practices

Outcome Type: Medium

2007:	300	2008:	300	2009:	300	2010:	300	2011:	300

Outcome Target
Number of clientele who reported an increase in recreational use of land or pond

Outcome Type: Medium

2007:	25	2008:	25	2009:	25	2010:	20	2011:	20

Outcome Target
Number of Manure Samples analyzed by UA Lab

Outcome Type: Medium

2007:	3400	2008:	3400	2009:	3400	2010:	3400	2011:	3400

Outcome Target
Number of Soil samples from livestock producing counties analyzed by UA soil lab

Outcome Type: Long

2007:	5000	2008:	5000	2009:	5000	2010:	5000	2011:	5000

Outcome Target
Value of agricultural products sold ($1,000): “Other animals and other animal products.”

Outcome Type: Long

2007:	6196	2008:	6196	2009:	6196	2010:	6196	2011:	6196

Outcome Target
Acres of crops planted: “Field & Miscellaneous Crops.”

Outcome Type: Long

2007:	7496000	2008:	7496000	2009:	7496000	2010:	7496000	2011:	7496000

20. External factors which may affect outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)
- Other (Changes in regulatory policies)

Description

Changes in environmental regulations & policies could be driven by current and future environmental lawsuits and court rulings. Other system management changes that could impact production practices include: price of fuel and commercial fertilizers, changes in contract requirements between integrators and contract livestock producers, development of new manure management systems and techniques, and/or farm management limits imposed due to bio-security concerns.

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

Description

{NO DATA ENTERED}

22. Data Collection Methods

- Sampling
- Whole population
- On-Site
- Unstructured
- Case Study
- Tests
- Other (Secondary data: Ag Stat)

Description

« Documentation of the activities that take place and the contacts at each.
« Individual meeting evaluations.
« Records of the number of activities
« Records of the number of individuals attending the activities
« Records of the number of the manure samples analyzed
« Records of the number of soil samples analyzed
« Periodic pre and post evaluation forms at meetings, and field days to assess audience reception of the information

1. Name of the Planned Program

Animals & Animal Products

2. Program knowledge areas

- 305 10% Animal Physiological Processes
- 306 10% Environmental Stress in Animals
- 303 10% Genetic Improvement of Animals
- 302 10% Nutrient Utilization in Animals
- 307 10% Animal Management Systems
- 135 10% Aquatic and Terrestrial Wildlife
- 311 10% Animal Diseases
- 304 10% Animal Genome
- 301 10% Reproductive Performance of Animals
- 308 10% Improved Animal Products (Before Harvest)

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

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

5. Brief summary about Planned Program

The University of Arkansas, Division of Agriculture provides leadership for discovery and developmental research, education, and extension activities to improve animal productivity, animal health and safety for (commercial?) livestock, poultry and aquaculture (production?), as well for domesticated farm animals, companion animals and pets, and wildlife. Arkansas animal agricultural enterprises include meat and meat products, poultry products (meat and eggs), fish, shellfish, and dairy products (milk and cheese).

The UA Division of Agriculture faculty work together to understand related the issues of livestock production, products and processing, aquaculture, and wildlife management. These activities also expand our knowledge of the impact of the human/animal interaction on environmental and economic sustainability and the well-being of animals and humans alike. The goal of the research program is to provide pertinent basic and practical information on animal and poultry physiology, genetics, nutrition and animal health that will help Arkansas livestock producers and food companies remain competitive in the global market place.

The Livestock production and management programs provide research-based information through non-formal educational methods for the sustainability of agricultural production systems to improve Arkansans quality of life and to teach lifelong skills to youth.

While highly efficient, organized, and sophisticated, the U. S. poultry industry is facing unprecedented challenges. As the poultry industry meets the challenge of remaining viable in a highly competitive global market as well as facing extraordinary domestic challenges, the poultry industry will rely more on educational opportunities provided by the UA Division of Agriculture Extension Service to develop better production strategies through the following programs:

« Poultry Breeder Management Training to ensure that maximum performance is obtained from these valuable flocks
« Poultry Hatchery Management Training to ensure that hatcheries operate efficiently
« Poultry Producer Education Programs to encourage producers to adopt effective management practices
« Poultry Short Courses to ensure that allied industry officials understand the industry
« Demonstrations that show the impact of water quality on poultry production to encourage proper water management.

6. Situation and priorities

Livestock production is a very important industry in Arkansas. Approximately 30,000 farms in Arkansas produce beef cattle. Arkansas is the home of 1.9 million head of cows and calves, with the number of beef cows and heifers reaching over 1.0 million head in 2005. The average cow herd size is 37 head with 80% of the farms having less than 50 head. The gross income from Arkansas' beef cattle industry reached $555 million with a total economic impact over $1 billion annually. The total annual economic impact of the dairy industry with heifers and dairy products is $450 million. Approximately 220 dairies with 24,000 dairy cows are located in Arkansas. With an average milk production per cow of 13,250 pounds in commercial herds, the Arkansas dairy industry produces over 300 million pounds of milk per year. Milk income is $50 million per year. Fluctuation in milk prices, quality milk production and efficiency of milk production continue to be major concerns of the Arkansas dairy industry.

The horse industry is growing in Arkansas. Approximately 63,000 households own 160,000 to 170,000 horses. Although recreation is the number one reason for horse ownership, the horse industry is a $4 billion industry.

Livestock producers will benefit from livestock management production programs to improve production efficiency and returns. In addition,

society will benefit as a result of better trained youth becoming better adult citizens.

Arkansas is a leading state in overall animal and poultry production and has several key companies in meeting the U.S. and international demand for high quality meat products. The poultry industry is a major source of jobs, income and cash flow with the state of Arkansas. Ensuring that the research and educational needs of the poultry industry are met is a priority.

Given current economic conditions, many agricultural producers and private landowners seek ways to generate income from their land. Arkansas has a $167 million aquaculture industry with an economic impact of over $1.2 billion in the poverty-stricken Delta region of Arkansas. Improved economic conditions of some rural communities in the south have been attributed to income generated from alternative agricultural enterprises. Experts in the University of Arkansas System are available to provide basic information about content areas to help the landowner get started in his or her interest in aquaculture agricultural enterprises.

7. Assumptions made for the Program

Because of the abundance of natural resources (water, land, etc.), livestock and poultry production will continue to be a major industry in Arkansas. The UA Division of Agriculture identifies and responds to research and educational programming needs through a grass-roots stakeholder driven effort. Planning and implementing research and education programs in partnership with the producing clientele insures that Division of Agriculture integrated efforts will be relevant and responsive to changing and emerging needs. Arkansas livestock producers will face ever changing challenges, and they will look to UA Division of Agriculture Research and Extension faculty to help them face those challenges.

The Aquaculture Alternative Agricultural Enterprises program will continue to perform based on the past history of this program and the rural economy of Arkansas. Given current trends in declining numbers of farms, part-time and hobby farmers, specialized farming, and the globalization of agriculture, producers continually seek new and innovative ways to generate farm income. What may be an alternative enterprise to one individual or geographic region might be standard or traditional to another individual or geographic region. Identifying niche markets and capitalizing on specialized agricultural opportunities is a matter of economic survival for agricultural producers. Extension is strategically-placed as educators and information providers with access to experts and researchers in diverse fields throughout the University of Arkansas System.

Funding will remain constant or increase.

8. Ultimate goal(s) of this Program

Through integrated UA Division of Agriculture research and education efforts:

« Ensure the viability and efficiency of the livestock industry so that it competes effectively in domestic and global markets.
« Ensure the viability and efficiency of the poultry industry so that it competes effectively in domestic and global markets.
« Support the aquaculture industry as an alternative enterprise.
« Improved economic (efficiency and profitability) position of livestock, poultry and aquaculture producers.

9. Scope of Program

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

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	26.0	0.0	25.0	0.0
2008	26.0	0.0	25.0	0.0
2009	26.0	0.0	25.0	0.0
2010	26.0	0.0	25.0	0.0
2011	26.0	0.0	25.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Conduct educational meetings, tours, field days, farm demonstrations, workshops, farm visits, and other one-on-one consultations to educate agricultural producers.
Publish articles, participate in media interviews in publications targeting agricultural producers and private landowners, and conduct mass media efforts (radio, TV, etc.).
Develop curriculum, provide online education, and write and/or update printed materials (fact sheets, etc.) that addresses the changing needs of the clientele
Conduct train-the-trainer education
Partner with industry (when appropriate)
Design and conduct practical and applied research to improve the efficiency of growth, reproduction, health and management of livestock and poultry.

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

Extension	
Direct Methods	Indirect Methods
• Education Class • Workshop • One-on-One Intervention • Demonstrations • Other 1 (Partner with Industry) • Other 2 (Train the Trainer)	• Newsletters • TV Media Programs • Web sites • Other 1 (Publications) • Other 2 (Educational Displays)

15. Description of targeted audience

Agricultural producers
Non-farm private landowners
Aquaculture producers
Small pond owners
Agricultural businesses/Allied industry personnel
Consultants
Breeder managers
Hatchery Managers
Commercial poultry producers
Commercial poultry companies
Other researchers
Students
Extension specialists
Teaching faculty
Research funding personnel and agencies
Policy and decision makers
Public

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	42700	85500	0	0
2008	44700	89500	0	0
2009	46800	93700	0	0
2010	49050	98110	0	0
2011	51320	102740	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 2 2008 : 2 2009 : 2 2010 : 2 2011 : 2

18. Output measures

Output Target

Number of educational programs, workshops, educational meeting and/or field days

2007: 514 2008: 514 2009: 516 2010: 517 2011: 518

Output Target

Number of clientele attending educational programs (field days, workshops, etc.)

2007: 12021 2008: 12500 2009: 12500 2010: 12600 2011: 12600

Output Target

Number of producers receiving educational material (newsletters, fact sheets, etc)

2007: 5361 2008: 5500 2009: 5500 2010: 6000 2011: 6000

Output Target

Number of producers conducting on farm demonstrations

2007: 36 2008: 41 2009: 47 2010: 53 2011: 57

Output Target

Number of farm visits or one-on-one consultations with producers

2007: 4155 2008: 4175 2009: 4185 2010: 4200 2011: 4215

Output Target

Number of Arkansas Commodity Board Grants received

2007: 115 2008: 115 2009: 115 2010: 115 2011: 115

Output Target

Number of federal grants and contracts

2007: 85 2008: 88 2009: 91 2010: 95 2011: 100

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of livestock producers who gained awareness related to livestock production management practices

Outcome Type: Short

2007: 500 2008: 550 2009: 550 2010: 600 2011: 600

Outcome Target

Number of livestock producers who gained knowledge related to livestock production management practices

Outcome Type: Short

2007: 500 2008: 550 2009: 550 2010: 600 2011: 600

Outcome Target

Number of allied industry personnel who increased awareness related to livestock & poultry production information/practices

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 60 2011: 70

Outcome Target

Number of allied industry personnel who gained knowledge related to livestock & poultry production information/practices.

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 60 2011: 70

Outcome Target

Number of clientele who reported knowledge gained related to aquaculture

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 60 2011: 60

Outcome Target

Number of refereed Journal Publications

Outcome Type: Short

2007: 315 2008: 315 2009: 320 2010: 320 2011: 320

Outcome Target

Number of livestock producers who adopted a new practice

Outcome Type: Medium

2007: 100 2008: 125 2009: 150 2010: 150 2011: 175

Outcome Target

Number of livestock producers who initiated or improved their record keeping

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
100	100	125	125	150

Outcome Target
Number of practices or technology adoptions by poultry producers

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
100	100	115	120	125

Outcome Target
Number of clientele who adopted new aquaculture practices

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
20	20	25	30	35

Outcome Target
Number of practices or technology adoptions by allied poultry industry personnel

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
25	25	25	30	30

Outcome Target
Number of patents and PVPs

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
15	15	15	15	15

Outcome Target
Number of livestock producers who changed a management practice

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
500	550	550	600	600

Outcome Target
Arkansas cash receipts from farm marketing ($1,000) related to livestock, dairy and poultry Enterprises

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
4712669	4712669	4712669	4712669	4712669

Outcome Target
Arkansas cash receipts from farm marketing ($1,000) related to aquaculture enterprises

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
106618	107000	107000	108000	108000

Outcome Target
Business Start Ups

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
2	2	2	3	3

20. External factors which may affect outcomes

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

Description

The success of the industry depends upon supply, demand and consumption patterns. Any disruption in any of these factors will result in a change in program plans to meet the research and educational needs involved.

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study
- Other (Sec. data: NatAgStatServ)

Description

« Informal surveys of technology or practice before and after workshops
« Participant surveys
« Comprehensive program and departmental surveys for research, extension and teaching programs are conducted on a five year cycle

22. Data Collection Methods

- Sampling
- Whole population
- On-Site
- Unstructured
- Case Study
- Observation
- Tests
- Other (Secondary-Arkansas data: Nationa)

Description

{NO DATA ENTERED}

1. Name of the Planned Program

Economics & Commerce

2. Program knowledge areas

- 601 10% Economics of Agricultural Production and Farm Management
- 112 10% Watershed Protection and Management
- 603 10% Market Economics
- 602 10% Business Management, Finance, and Taxation
- 604 10% Marketing and Distribution Practices
- 606 10% International Trade and Development
- 611 10% Foreign Policy and Programs
- 610 10% Domestic Policy Analysis
- 801 10% Individual and Family Resource Management
- 605 10% Natural Resource and Environmental Economics

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

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

5. Brief summary about Planned Program

The U.S. agricultural production system has evolved into an industry that is very capital intensive, increasingly dependent upon export markets and greatly influenced by government policy. The competitive situation of the agricultural production system is also affected by the performance of the distribution, processing and retailing sectors of the overall industry. Comparative advantage in global markets is determined not only by relative efficiencies in agricultural production but by the performance of the entire food and fiber system. University of Arkansas Division of Agriculture research projects in the areas of agricultural economics and agribusiness have and will continue to focus on extending the knowledge base in understanding these important linkages. Projects will focus on:

1. Development and economic evaluation of new technologies and products
2. Development and analysis of government policies including trade, environmental, farm and macroeconomic policies
3. Assessment of financial markets and their implications for credit availability for agriculture
4. Documentation of changes in the structure of Arkansas agriculture.

The Extension AEAB program will educate farmers, marketers, consumers, policy makers and other professional economists through research. The research will improve the economic well-being of Arkansas producers and consumers by seeking efficient and equitable solutions to agricultural production, finance, environmental, agribusiness marketing and management, trade and policy issues. Research will address the dynamic changes facing Arkansas food and agricultural industry including: economic development, environmental constraints, restructuring of capital and product markets.

The aim of Extension family resource management programs is to help Arkansans learn to effectively manage their resources to achieve financial security. County Family and Consumer Sciences agents are trained to disseminate financial management information to Arkansans. Resource management programs teach youth and adults financial literacy concepts, skills and practices. Arkansas families who learn financial management skills can lay the foundation for a secure financial future. Resource Management Programs focus on:

1. Basic Financial Management
2. Consumer Skills
3. Youth Financial Literacy
4. Budget Development
5. Money Management
6. Wise Use of Credit
7. Consumer Protection
8. Estate Planning

Recent changes in the bankruptcy laws place additional restrictions on consumers, limiting those who qualify to file for bankruptcy. The law also requires bankruptcy filers to complete a minimum of two hours of basic financial management education. Extension programs can meet the financial education requirement for bankruptcy filers. For consumers with credit card debt, bankruptcy may not be an option. Consumers who are in financial trouble and do not qualify for bankruptcy will benefit from credit management and debt repayment skills. Arkansans living near or below the poverty level will benefit from acquiring skills to make the most of limited income.

6. Situation and priorities

To maintain a highly competitive agricultural production system, the U.S. and the state of Arkansas must ensure that firms operating in the industry are economically viable and efficient. One way to increase global competitiveness is through the development of new technology and product marketing. However in addition to new technologies, changes in government policies and general fluctuations in economic conditions will also affect economic performance and global competitiveness. There is a need not only for developing and evaluating new technologies that enhance competitiveness, but for an extension of the knowledge base of all factors that influence the industry's competitive position in global markets. Achieving goals of global competitiveness cannot be reliant solely on the development of new production technologies. A complete understanding of all important factors will be necessary to be successful.

Factors affecting the global competitiveness of the U.S. agricultural production system include:

1. Firm management decisions
2. Macroeconomic, environmental, farm and trade policies
3. Financial markets
4. Domestic and international supply and demand conditions
5. Industry structure and organization
6. Development and adoption of new technologies.

Arkansas agricultural producers have faced volatile prices in recent history due to a significant rise in production costs associated with natural disasters and higher energy prices. AEAB documented at least $980 million in losses for Arkansas agriculture due to these causes. These uncertain times requires farmers to have a better understanding of sound farm financial management practices including risk management

Arkansas' three year average poverty rate is 17.6 – one of the highest in the nation (U.S. Census Bureau). Almost forty-four percent of single mothers with related children in Arkansas live in poverty (Rural Family Profile of Arkansas 2004, UA Division of Agriculture). Personal debt and bankruptcy filings in Arkansas are at an all time high and savings rates are at historically low levels. The number of Arkansans filing for bankruptcy grew from 6,467 in 1994 to 23,887 in 2004 (American Bankruptcy Institute). Arkansas is 9th in the United States for proportion of older Americans in the population, with 14% of Arkansans ages 65 and older in 2000. The median age of the U.S. population continued to rise, from 35.3 years on April 1, 2000, to 35.9 years on July 1, 2003 (U.S. Census Bureau).

Employment uncertainties due to the global economy and new technology are impacting Arkansas workers. Ernie Goss, chairman of regional economics at Creighton University in Omaha, Neb., stated that Arkansas has lost more than 37,000, or 15.6 percent, of its manufacturing jobs in the past five years (Arkansas News Bureau). In 2004, the Federal Trade Commission received 635,000 consumer fraud and identity theft complaints. Identity theft has been the top complaint for the past five years. Reported losses from consumer fraud amounted to more than $547 million in 2004 (Federal Trade Commission).

7. Assumptions made for the Program

Strong interactions with farm leadership from promotion boards, farm organizations and recognized progressive farmers have identified the priority areas addressed by the program.

The basic premise of Extension Resource Management educational programs is that through the programs, citizens will increase knowledge and skills. The knowledge and skills will lead to behavior change and the consumer will begin to use recommended financial management techniques. Then, the use of recommended financial management techniques will lead to increased financial security.

Jeanne M. Hogarth, Sondra G. Beverly, and Marianne Hilgert studied financial behaviors of U.S. households using data from the Surveys of Consumers by the Survey Research Center. Survey questions covered financial experience, behavior, management, and preferred methods of financial education. Researchers divided financial behavior into three categories: cash flow management, saving, and investing. Each category was further divided into low, medium, or high with respondents in the low group reporting the least incidents of behavior relating to the particular financial management category and respondents in the high group having the most reported behaviors indicative of the performance in the financial management category. The article states that (page 11) "Within each index, those with a high score also had higher scores on the knowledge quiz." The scores for financial knowledge and financial learning experiences were consistently significant across all three categories; indicating a correlation between financial knowledge and financial behavior.

According to a "systems influences" framework that examines financial security protective factors, Marlene S. Stum and Suzann Knight identify financial literacy; saving/asset management; and identifying and communicating financial goals as factors that increase or protect financial security. Extension education programs lead to increased financial literacy, and adoption of recommended financial management practices including goal setting and money management. Therefore, increased learning and behavior change of program participants indicate protective factors that increase financial security for those individuals. All other influencing factors held constant, a significant increase in financial security for a population should be reflected in a decrease in non-business bankruptcy filings for that same population.

Beverly, S. G.; Hilgert, M. & Hogarth, J. M. (2003). Patterns of financial behaviors: Implications for community educators and policymakers. From Federal Reserve System Community Affairs Research Conference, at www.chicagofed.org/cedric/files/2003_conf_paper_session1_hogarth.pdf
Knight, S. & Stum, M. (2002, March). From research to reality: A roadmap to financial security in later life. University of Minnesota National

Initiative Roll-out conference at http://www.csrees.usda.gov/nea/economics/fsll/edu_framework_fig2.html

8. Ultimate goal(s) of this Program

« The development and identification of new technologies that enhance profitability and manage risk
« Broadening the understanding of linkages between policy, market conditions, industry structure and system competitiveness.
« Investigate and address concerns, as they emerge.
« Position the State of Arkansas as a national leader in dealing with new and emerging concerns.
« Continue to support strategic partnerships that create value-added benefits for Arkansas' environment and its people.
« Help Arkansas to achieve high degree of competitiveness in a global economy.
« Increase family financial security by providing resource management training for youth and adults.

9. Scope of Program

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

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	18.0	0.0	11.0	0.0
2008	18.0	0.0	11.0	0.0
2009	18.0	0.0	11.0	0.0
2010	18.0	0.0	11.0	0.0
2011	18.0	0.0	11.0	0.0

Outputs for the Program

13. Activity (What will be done?)

New technologies and products that will enhance global competitiveness
Economic evaluations of selected new technologies that may increase production efficiencies
Create educational products and materials.
Develop and conduct educational meetings
Direct clientele contact, phone calls, personal visits, mail, and e-mail.
Develop, evaluate, and disseminate education programs and curricula, incorporating new research and emphasizing:
« Basic Financial Management
« Consumer Skills
« Youth Financial Literacy
« Budget Development
« Money Management
« Wise Use of Credit
« Consumer Protection
« Estate Planning
« Farm and Risk Management

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

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (File patents) • Other 2 (Write grant proposals)	• Newsletters • Other 1 (Train students) • Other 2 (Publish sci. & tech. pubs)

15. Description of targeted audience

Farmers
Marketers
Consumers
Professional Economists
“Baby Boomers”
Limited Resource Families
Adults age 65 and older
Young Adults
Youth Ages 14-19
Other Researchers
Students
Extension Specialists
Teaching Faculty
Research Funding Personnel and Agencies
Policy and Decision Makers

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	15300	90300	0	0
2008	16800	99300	0	0
2009	18400	108400	0	0
2010	20265	110300	0	0
2011	22260	112300	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 1 2008 : 0 2009 : 1 2010 : 0 2011 : 1

18. Output measures

Output Target

Number of educational sessions provided to clientele on Farm and Risk Management and Commodity Marketing

2007: 90 2008: 100 2009: 100 2010: 100 2011: 100

Output Target

Number clientele participating in educational sessions related to Farm Financial Management/Risk Management

2007: 2000 2008: 2000 2009: 2000 2010: 2000 2011: 2000

Output Target

Number of family resource management educational programs/workshops conducted

2007: 20 2008: 25 2009: 30 2010: 30 2011: 35

Output Target

Number of family resource management in-service training sessions conducted

2007: 2 2008: 2 2009: 2 2010: 2 2011: 2

Output Target

Number of Educational Products & Materials Disseminated

2007: 90000 2008: 95000 2009: 96000 2010: 97000 2011: 98000

Output Target

Direct clientele contacts, phone calls, personal visits, mail, and e-mail

2007: 9500 2008: 9600 2009: 9700 2010: 9700 2011: 9700

Output Target

Number of Arkansas Commodity Grants Received

2007: 10 2008: 10 2009: 10 2010: 12 2011: 12

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of Refereed Journal Publications

Outcome Type: Short

2007: 20 2008: 20 2009: 20 2010: 25 2011: 25

Outcome Target

Number of producers who have an increased understanding of farm and risk management

Outcome Type: Short

2007: 300 2008: 300 2009: 300 2010: 300 2011: 300

Outcome Target

Number of participants who complete basic financial management education programs

Outcome Type: Short

2007: 800 2008: 800 2009: 800 2010: 800 2011: 800

Outcome Target
Number of participants who: Increase knowledge of budget development, increase knowledge of money management, increase knowledge of wise use of credit, and/or increase knowledge of consumer protection

Outcome Type: Short

2007:	700	2008:	700	2009:	700	2010:	700	2011:	700

Outcome Target
Number of producers that implemented changes in management practices as a result of farm management educational efforts

Outcome Type: Medium

2007:	300	2008:	400	2009:	500	2010:	600	2011:	700

Outcome Target
Number of producers that implemented changes in management practices as a result of farm policy educational efforts

Outcome Type: Medium

2007:	300	2008:	400	2009:	500	2010:	600	2011:	700

Outcome Target
Number of producers that implemented changes in management practices as a result of commodity marketing educational efforts

Outcome Type: Medium

2007:	300	2008:	400	2009:	500	2010:	600	2011:	700

Outcome Target
Number of Farmers Markets

Outcome Type: Medium

2007:	23	2008:	23	2009:	23	2010:	23	2011:	23

Outcome Target
Number of participants who adopt one or more of the following practices: Set financial goals, calculate net monthly income, develop a spending plan, keep financial records (including, but not limited to household account record and expense record)

Outcome Type: Medium

2007:	650	2008:	650	2009:	650	2010:	650	2011:	650

Outcome Target
Percentage of participants reporting an increase in savings

Outcome Type: Long

2007:	40	2008:	40	2009:	40	2010:	40	2011:	40

Outcome Target
Percentage of participants reporting a decrease in debt

Outcome Type: Long

2007:	50	2008:	50	2009:	50	2010:	50	2011:	50

Outcome Target
Number of non-business bankruptcy filers statewide (for 2011 compared to 2007)

Outcome Type: Long

2007:	23264	2008:	23164	2009:	23000	2010:	23031	2011:	22101

Outcome Target
Sustainable, vibrant and globally competitive agricultural sector for Arkansas as indicated by Arkansas Cash Farm Receipts (NASS)

Outcome Type: Long

2007:	7203858	2008:	7203858	2009:	7203858	2010:	7203858	2011:	7203858

Outcome Target
Sustainable, vibrant and globally competitive agricultural sector for Arkansas as indicated by Arkansas Net Farm Incomes (ERS)

Outcome Type: Long

2007:	3242643	2008:	3242643	2009:	3242643	2010:	3242643	2011:	3242643

Outcome Target
Sustainable, vibrant and globally competitive agricultural sector for Arkansas as indicated by “Value of Agricultural Sector Production from Arkansas Farms”

Outcome Type: Long

2007:	7458315	2008:	7458315	2009:	7458315	2010:	7458315	2011:	7458315

20. External factors which may affect outcomes

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

Description
Natural disasters

Higher energy prices

The economy can have a distinct impact on resource management programs. Typically, in the event of difficult times, we would expect that more consumers to attend financial education programs. Likewise, in the event of stronger economic times, we may expect fewer consumers to be focused on the need to learn financial management skills.

Current public policy requires bankruptcy filers to participate in financial management education programs. A change in this law could reduce the number of people who attend Extension resource management programs. Competing programmatic challenges occur for resource management as competing agencies develop financial management education programs to meet the needs of bankruptcy filers.

Natural disasters have the capacity to interrupt the thrust of Extension programming. In the event of an extreme natural disaster, programs and resources may be redirected to accommodate emergency needs of citizens.

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Case Study

Description
Comprehensive departmental and programmatic evaluations for research, extension and teaching programs are conducted on a five- to seven-year cycle.

Surveys of contacts to determine the impact on management practices related to farm management, marketing and policy will be administered.

These studies will be conducted over a five year period.

22. Data Collection Methods

- Sampling
- Mail
- On-Site
- Observation
- Other (Sec. data:USDA/AR AgStatServ)

Description

We will collect data from a sample of program participants who complete basic financial management educational programs.

Contacts will be surveyed by mail, on-site surveys and personal observation to determine impact of program or management practices.

1. Name of the Planned Program

Families, Youth, & Communities

2. Program knowledge areas

- 804 5% Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures
- 801 5% Individual and Family Resource Management
- 803 5% Sociological and Technological Change Affecting Individuals, Fam
- 608 10% Community Resource Planning and Development
- 805 5% Community Institutions, Health, and Social Services
- 806 50% Youth Development
- 610 8% Domestic Policy Analysis
- 802 5% Human Development and Family Well-Being
- 602 7% Business Management, Finance, and Taxation

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

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

5. Brief summary about Planned Program

The Division of Agriculture addresses a wide variety of specific research topics dealing with quality of life and community development, including work on rural and child health care and health care in the Delta, on human migration and human capital movements in the Delta; retirement in-migration and its effects upon receiving communities; issues of aging; and recently on the human dimension of environment, natural resources, and public lands management issues. Extensive contributions have been made in the area of child care and youth development. Most of these research efforts have addressed specific quality of life or community needs.

The Arkansas 4-H program is dedicated to youth development; creating opportunities for youth that broadens skills and aspirations, nurturing the full potential of youth.

The Couple and Marriage Relationships program is an effort to provide quality, research-based education and training about dating and marriage relationships to county Extension agents who work with married couples, or those considering marriage, in their respective communities. The parenting and family relationship program has two parts: preparing adolescents and adults for parenting and providing knowledge, attitudes, and skills for those who are parents. The individual development program focuses on helping teens and adults develop the skills, attitudes, and practices for personal well-being.

Arkansas Extension offers child care providers professional development training and education. Extension addresses provider needs for continuing education through a variety of formats to meet individual needs. There are three components. The Best Care program provides ten hours of child care provider training addressing resource management, nutrition, health and safety, and child development. The second component is a child care provider training program called Best Care Connected. Best Care Connected is a five-hour child care training program offered on-line via the Internet. The last component is a child care provider training program called Guiding Children Successfully (GCS). GCS is a 12-hour video/DVD series that offers sensible advice and techniques for working with children. Eight hours of self study is also available to child care providers through our Parenting Journey resources.

The University of Arkansas Cooperative Extension Service has defined community and economic development program efforts as “People working together to create or preserve their desired community.” It is the objective of this planned program to improve the social and economic well-being of Arkansas communities through research-based educational programming that increases the knowledge, skills and participation of citizens in creating their desired future.” To accomplish this objective the Cooperative Extension Service Community and Economic Development Program will be a leading, unbiased source of expertise in community and economic development.” This program will include research and extension programs in economic development, small business assistance, leadership development, and public issues education.

6. Situation and priorities

Arkansas remains one of the most rural states in the Union, but is undergoing rapid demographic, political and economic change. Many of the state’s most rural communities, especially those most dependent upon natural resource economies, such as forest- dependent communities, struggle to gain some control over decisions that may affect their community as more responsibilities are forced upon them without new resources. Other communities find their quality of life threatened by rapid and uncontrolled growth. More than a decade of various kinds of local needs assessments have made it clear that rural communities require help in dealing with local economic development and quality of life issues. These include concerns about job development, education, youth, and crime; local infrastructure, paralyzing conflict in their communities, leadership and local decision-making. Special concern exists for the Mississippi River Delta region, where out-migration, economic decline, and conflict have become endemic in many communities. The number of jobs declined in all but one rural

Delta county between 2000 and 2003. Seventeen Arkansas counties had median household incomes of less than $26,000 in 1999; all of these are rural counties.

There are 680,369 youth under age 18 living in 371,331 households. Over 20 percent of Arkansas' young people are living in poverty. Currently, 167,902 children live in a single-parent family and 62,167 children live in a household with other relatives. There are 273,182 children with both parents in the workforce, 150,000 children with one parent in the workforce and 20,075 children with neither parent in the household. Many children have very little nurturing or mentoring from committed adults. The societal challenges combine with limited parenting and relationship skills and poorer social support networks overwhelm many Arkansans. Arkansas is also experiencing a significant increase in the Hispanic youth population, now totaling 32,016 children under age 18. Ethnic diversity is an increasing important factor in programming decisions. With new and growing challenges, effective youth development is more important than ever.

Divorce costs the United States an estimated $33.3 billion annually; or $312 per household. Twenty-eight percent of Arkansas families are headed by a single parent; 65 % of mothers with children under the age of five are in the workforce; 72 % of children under the age of 6 live in families with both parents working; over 70 % of children 3-6 years of age spend substantial amounts of time in non-parental care; 52 % of children under three are in non-parental care. In 2005, 553 of Arkansas' 2,851 licensed child care facilities have achieved quality approval status. Training available at times, locations and formats convenient to child care providers is essential to improving the quality of Arkansas child care.

7. Assumptions made for the Program

Programs addressing quality of life and community development issues focus on addressing specific needs of communities and families in close collaboration with state and federal agencies and policymakers. Close coordination is required between the experiment station and cooperative extension to ensure that research studies are conducted that meet specific needs of importance and that needed information is utilized in a public outreach program or to provide needed information for policymakers. A survey research center has been developed to facilitate research in the social sciences and to serve as a resource to policymakers, state agencies and communities.

The Arkansas 4-H Program focuses its work on teaching youth and adults the life skills necessary to become capable, competent and caring citizens. The theory of Positive Youth Development guides program development for the Arkansas 4-H Program. The research based Targeting Life Skills Model is the foundation for measuring life skill development. Eight life skills have been selected to measure on a statewide basis.

The life skills are:

« Decision Making
« Wise Use of Resources
« Communication
« Accepting Differences
« Leadership
« Useful/Marketable Skills
« Healthy Lifestyle Choices
« Self-Responsibility

Child care training will continue to be a need because of state mandated licensing requirements. Funding will remain stable or increase during the next seven years. Knowledge can lead to attitude and behavior change. Child care providers will be motivated to learn and adopt recommended practices. Targeted audiences are willing and able to participate in child care training programs.

Improving the economic well-being and quality of life for Arkansans and Arkansas communities is increasingly challenging in today's world. Issues such as globalization, changes in information technologies, government regulatory and fiscal policy, demographic shifts, threats of terrorism, and social needs all impact our society. Education programs are needed to help citizens, businesses, and communities deal with these issues and take advantage of opportunities that accompany these changes.

The needs are numerous. Counseling, education, and technical assistance for home-based and other small businesses are needed for rural economic development. Business owners and professionals need continuing education regarding changes in regulatory and tax policy. Youth and adults need leadership, government, citizenship, and issue-driven knowledge and skills so that they can act strategically to position their communities for continued economic viability and success.

8. Ultimate goal(s) of this Program

« To enhance the economic opportunity and quality of life for all Arkansas citizens with a particular emphasis on rural communities and under-served populations
« To strengthen and increase the quality of marriage and couple relationships
« Quality parenting that leads to socially competent children
« Individuals (teens and adults) achieve personal well-being through skill development, attitude change, and the adoption of effective practices
« The mission of 4-H is to provide opportunities for youth to acquire knowledge, develop life skills, form attitudes, and practice behavior that will enable them to become self directing, productive, and contributing members of society

« To improve the quality of care for the children in Arkansas
« Launch a strategic approach to leadership and community development including an asset-based mindset, a culture of collaboration and entrepreneurial development to support development of economic and community sustainability and growth

9. Scope of Program

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

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	145.0	0.0	8.0	0.0
2008	145.0	0.0	8.0	0.0
2009	145.0	0.0	8.0	0.0
2010	145.0	0.0	8.0	0.0
2011	145.0	0.0	8.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Division of Agriculture research programs addressing quality of life and community development issues focus on addressing specific needs of communities and families in close collaboration with state and federal agencies and policy makers.

Parenting and Family Relationships, and Individual Development: Develop, evaluate, and disseminate education programs and curricula, incorporating new Division of Agriculture research.

Couple and Marriage Relationships:
« Design and develop the Marriage Journey curriculum to promote strong marriages.
« Provide more information and resources for strengthening marriage on the www.arfamilies.org website.
« Train county FCS agents how to facilitate marriage education workshops.
« Provide the best marriage education resources (e.g., books, videos, curriculum, etc.) to county FCS agents.

The 4-H Program in Arkansas is delivered through the 75 counties using research based, jury reviewed curriculum. State Faculty provides program leadership and direction. Site based experiential learning programs are delivered at the Arkansas 4-H Center and the Lonoke Farm. Specific 4-H Program deliver modes include:
« Organized 4-H Clubs
« School enrichment programs
« After School clubs/programs
« Special Interests groups
« Camping

Three Child Care provider training programs supporting this plan of work:

« The Best Care
« Best Care Connected
« Guiding Children Successfully

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

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Displays; Family Fairs) • Other 2 (Professional Conf. Presentations)	• Public Service Announcement • Newsletters • Billboards • TV Media Programs • Web sites • Other 1 (Teacher Training) • Other 2 (On-line train; video/DVD train)

15. Description of targeted audience

Adolescents and adults
Adolescents and adults who expect to become parents
Parents
Grandparents
Step parents
Foster parents
4-H members
4-H youth participants
4-H volunteers
4-H parents
Non-4-H adults
School teachers
County Extension faculty
County FCS Agents
Extension Homemakers Council members and trainers
All married couples or those couples considering marriage
Child care providers
Local, state, and community leaders
Elected officials
Entrepreneurs

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	172100	124500	282450	50575
2008	173650	144750	284000	50900
2009	174550	147000	285150	51325
2010	175900	148750	285700	51450
2011	176600	150500	285850	51625

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 0	2008 : 0	2009 : 0	2010 : 0	2011 : 0

18. Output measures

Output Target

Number of Parenting Journey maps circulated

2007: 10500	2008: 11000	2009: 17000	2010: 18000	2011: 24000

Output Target

Number of parenting programs held

2007: 30	2008: 37	2009: 45	2010: 55	2011: 70

Output Target

Number of parenting participants

2007: 1500	2008: 2250	2009: 1600	2010: 4000	2011: 4000

Output Target

Number of parenting program hours of video training

2007: 110	2008: 122	2009: 154	2010: 176	2011: 190

Output Target

Number of hits on website

2007: 72000	2008: 90000	2009: 90000	2010: 90000	2011: 90000

Output Target

Number of marriage resources available in print or on www.arfamilies.org website

2007: 10	2008: 12	2009: 14	2010: 16	2011: 18

Output Target

Number of hits on www.arfamilies.org website marriage resources

2007: 500	2008: 1000	2009: 2000	2010: 3000	2011: 4000

Output Target

Number of marriage programs/trainings held

2007: 3	2008: 5	2009: 7	2010: 10	2011: 12

Output Target

Number of participants in marriage programs/trainings

2007: 100	2008: 300	2009: 500	2010: 800	2011: 1000

Output Target

Number non-duplicated 4-H Youth Development Science programs delivered

2007: 210	2008: 250	2009: 250	2010: 275	2011: 275

Output Target

Number non-duplicated participants in 4-H Youth Development Science programs

2007: 4000	2008: 4500	2009: 5000	2010: 5000	2011: 5000

Output Target

Number of organized 4-H Clubs

2007: 500	2008: 550	2009: 550	2010: 575	2011: 575

Output Target

Number non-duplicated 4-H Youth Development Healthy Lifestyles programs delivered

2007: 200	2008: 225	2009: 250	2010: 250	2011: 250

Output Target

Number non-duplicated participants in 4-H Youth Development Healthy Lifestyles programs

2007: 50000	2008: 50000	2009: 51000	2010: 55000	2011: 55000

Output Target

Number non-duplicated programs delivered in 4-H Youth Development Citizenship/Leadership

2007: 100	2008: 150	2009: 150	2010: 175	2011: 175

Output Target

Number non-duplicated technology and engineering programs delivered

2007: 75	2008: 100	2009: 100	2010: 120	2011: 120

Output Target

Number non-duplicated participants in technology and engineering programs

2007: 1000	2008: 1200	2009: 1500	2010: 2000	2011: 2000

Output Target

Number of Child Care educational trainings held

2007: 88	2008: 90	2009: 90	2010: 95	2011: 95

Output Target

Number of Child Care online courses offered

2007: 2	2008: 2	2009: 2	2010: 2	2011: 2

Output Target

Number of hours of Child Care in-service training offered

2007: 15	2008: 15	2009: 15	2010: 15	2011: 15

Output Target

Number of hours of Child Care video/DVD training provided

2007: 1800	2008: 1800	2009: 1500	2010: 1500	2011: 1500

Output Target

Number of direct adult contacts reported related to community and economic development

2007: 4000	2008: 4500	2009: 5000	2010: 5500	2011: 6000

Output Target

Number of indirect adult contacts reported related to community and economic development

2007: 6000	2008: 6750	2009: 7500	2010: 8250	2011: 9000

Output Target

Number of direct youth contacts reported related to community and economic development

2007: 150	2008: 200	2009: 250	2010: 300	2011: 350

Output Target

Number of indirect youth contacts reported related to community and economic development

2007: 200	2008: 225	2009: 250	2010: 275	2011: 300

Output Target

Number of events reported related to community and economic development

2007: 50	2008: 55	2009: 60	2010: 65	2011: 70

Output Target

Number of Arkansas Commodity Grants

2007: 3	2008: 4	2009: 4	2010: 5	2011: 5

Output Target

Number of federal grants and contracts

2007: 5	2008: 5	2009: 5	2010: 5	2011: 5

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of participants who indicate that they have gained new knowledge on a targeted parenting behavior

Outcome Type: Short

2007: 1000	2008: 1200	2009: 1400	2010: 1500	2011: 1500

Outcome Target

Number of participants who indicate that they have gained new knowledge on a targeted relationship-enhancing behavior

Outcome Type: Short

2007: 1000	2008: 1200	2009: 1400	2010: 1500	2011: 1500

Outcome Target

Number of participants who indicate that they have gained new knowledge on a targeted personal development behavior

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
1000	1200	1400	1500	1500

Outcome Target
Number of 4-H participants who learned decision making life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
200	250	300	325	350

Outcome Target
Number of 4-H participants who learned communications life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
350	400	450	450	500

Outcome Target
Number of 4-H participants who learned accepting differences life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
200	225	250	250	275

Outcome Target
Number of 4-H participants who learned healthy lifestyles choices life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
300	350	350	400	450

Outcome Target
Number of 4-H participants who learned self-responsibility life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
225	250	300	300	325

Outcome Target
Number of 4-H participants who learned leadership life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
300	350	350	375	400

Outcome Target
Number of 4-H participants who learned marketable skills life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
225	250	275	300	325

Outcome Target
Number of 4-H participants who learned wise use of resources life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
225	250	275	300	325

Outcome Target
Number of child care providers who report an increase in knowledge related to specific child care issues after participating in an Extension program

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
2500	2700	3000	3200	3200

Outcome Target
Number of participants that increased knowledge of community and economic development issues

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
2000	2500	3000	3500	4000

Outcome Target
Number of participants adopting an effective parenting behavior/practice

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
500	600	700	800	1000

Outcome Target
Number of participants adopting a targeted relationship-enhancing behavior

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
500	600	700	800	1000

Outcome Target
Number of participants adopting a targeted personal development behavior

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
500	600	700	800	1000

Outcome Target
Number of 4-H Journals completed in 4-H Youth Development Science areas

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
400	410	425	450	475

Outcome Target
Number of projects completed in 4-H Youth Development Science areas

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
500	500	525	525	550

Outcome Target
Number of 4-H Journals completed in 4-H Youth Development Healthy Lifestyles areas

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
130	140	140	145	150

Outcome Target
Number of projects completed in 4-H Youth Development Healthy Lifestyles areas

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
200	225	225	250	275

Outcome Target
Number of 4-H Journals completed in 4-H Youth Development Citizenship/Leadership areas

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
75	100	125	150	150

Outcome Target
Number of projects completed in 4-H Youth Development Citizenship/Leadership areas

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
300	350	350	400	425

Outcome Target
Number of 4-H Journals completed in 4-H Youth Development technology and engineering areas

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
100	105	115	120	125

Outcome Target
Number of projects completed in 4-H Youth Development technology and engineering

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
400	425	450	475	500

Outcome Target
Number of child care providers adopting a recommended practice after participating in an Extension program

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
1000	1200	1400	1500	1500

Outcome Target
Number of participants who report an improved relationship with a child as a result of using a targeted parenting behavior

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
500	600	700	800	1000

Outcome Target
Number of participants who report an improved relationship with a partner as a result of using a targeted parenting behavior

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
500	600	700	800	1000

Outcome Target
Number of participants who report an improved quality of life as a result of using a targeted personal development behavior

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
500	600	700	800	1000

Outcome Target
Number of 4-H members receiving scholarships and grants for post secondary education

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
40	50	60	60	65

Outcome Target
Number of youth and adults who practice good citizenship and provide community based leadership throughout Arkansas as evidenced by volunteer hours contributed through the 4-H program

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
3000	3500	4000	4000	4000

Outcome Target
Percent of long term (three years or more) 4-H members graduating High School

Outcome Type: Long

2007:	85	2008:	87	2009:	87	2010:	88	2011:	88

Outcome Target
Number of licensed child care facilities achieving quality approval status

Outcome Type: Long

2007:	5	2008:	10	2009:	15	2010:	20	2011:	25

Outcome Target
Number of community and economic development projects initiated

Outcome Type: Long

2007:	25	2008:	35	2009:	45	2010:	55	2011:	65

Outcome Target
Number of county residents and lay leaders conducting programs or adopting new skills as a result of community and economic educational efforts

Outcome Type: Long

2007:	25	2008:	35	2009:	45	2010:	55	2011:	65

Outcome Target
Number of youth conducting community service projects as a result of community and economic development educational efforts

Outcome Type: Long

2007:	15	2008:	25	2009:	35	2010:	45	2011:	55

Outcome Target
Number of contracts and subcontracts reported

Outcome Type: Long

2007:	700	2008:	800	2009:	900	2010:	1000	2011:	1100

Outcome Target
Number of Refereed Journal Publications

Outcome Type: Short

2007:	15	2008:	15	2009:	15	2010:	15	2011:	15

20. External factors which may affect outcomes

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

Description
Support of parent education has been episodic, spotty, and flimsy. Occasionally some event focuses attention on the need for parent training. But the acute challenges tend to command center stage while the persistent challenge of parenting gets neglected. In addition, new technologies and changing demographics create new challenges. Most people have very little sense of the factors that govern personal

well-being. New technologies and changing demographics create new challenges. Marital norms have been influenced by a variety of economic, environmental, and social trends, many of which have negative affects on the institution of marriage and its stability and quality. The need and availability of child care is very much a function of social milieu.

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Description

Comprehensive program and department reviews for research, extension, and teaching programs are conducted on a five- to seven-year cycle.

Evaluations will be conducted during the five year planning period:

« Parenting and Family Relationships
« Individual Development
« Evaluation of The Parenting Journey--subject to funding.
« Couple and Marriage Relationships

Current Strategy - Upon completion of a marriage or couple education course, participants will be surveyed regarding their changes in knowledge, their intent to change/modify behavior, and their belief that their new knowledge and intended behavior change will improve the quality of their relationship. An occasional case study may be performed with 1 or 2 program participants. Ideal Strategy – We hope to do an in-depth evaluation of the marriage journey (using pre/post testing and comparison groups) subject to funding.

22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Portfolio Reviews
- Tests
- Journals
- Other (Secondary Data Sources)

Description

Parenting and Family Relationships and Individual Development:

Surveys may be conducted with a statewide random sample. In addition, we will gather evaluation data from all those who attend selected programs.

Couple and Marriage Relationships:

Most program data collection will occur immediately at the end of a training using on-site survey techniques to measure changes in knowledge, intent to change behavior, and belief that knowledge gained and behavior change will improve their relationship quality.

Child Care:

Evaluation data will be collected by all participants in the child care training programs.

1. Name of the Planned Program

Food, Nutrition & Health

2. Program knowledge areas

- 724 5% Healthy Lifestyle
- 703 50% Nutrition Education and Behavior
- 806 10% Youth Development
- 701 5% Nutrient Composition of Food
- 502 5% New and Improved Food Products
- 723 5% Hazards to Human Health and Safety
- 712 5% Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxi
- 711 5% Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sourc
- 504 5% Home and Commercial Food Service
- 503 5% Quality Maintenance in Storing and Marketing Food Products

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

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

5. Brief summary about Planned Program

Given the importance of the food production and processing industry to the economy of Arkansas, a strong research and extension base in Food Science and Nutrition is of paramount importance. Food safety issues associated with the poultry industry and other food processing firms are also of high priority to the Division of Agriculture. The implementation of HACCP and other food safety programs increases the need for research-based information significantly. The large investment in research infrastructure in poultry science provides one of the few locations where food safety research can be addressed from the producer through processing and product preparation. The Division of Agriculture's Institute of Food Science and Engineering was created to focus multi-disciplinary research on food issues. This center draws on expertise in microbiology, food science, engineering, poultry science and other disciplines; bringing together corporate partners and faculty members with the appropriate research expertise to address research problems of immediate need to the industry.

Five of the ten leading causes of death in the U.S. have been linked to diet and nutrition as contributing factors. Poor diet and obesity remain as common problems especially among under-served populations. The Extension Food, Nutrition & Health programs have four components: 1) participation in regular physical activity, 2) adoption and maintenance of healthy lifestyles, 3) chronic disease prevention; and 4) nutrition education. The health program identifies and promotes evidence-based policies and practices that will reduce the incidence of chronic disease. Using science based information, Arkansans are engaged in programs such as Walk Across Arkansas, Strongwomen and the Medicine Cabinet Series to prevent chronic disease and promote healthy lifestyles and increased physical activity. The nutrition education program responds to the nutritional issues and needs of Arkansans across the lifespan and socioeconomic spectrum. Participants gain knowledge and skills that will help them adopt appropriate behaviors to prevent or delay lifestyle-related chronic diseases. Children and adults with limited resources learn healthy eating and activity practices through the Food Stamp Nutrition Education and Expanded Food and Nutrition Education Programs. Adult Arkansans interested in achieving and/or maintaining healthy weight are targeted with the 15-week Reshape Yourself program and the Right Bite cooking school. African American and Hispanic Arkansans learn healthy eating and activity practices through participation in the Eating and Moving for Life program.

Like never before, biotechnology and an improved understanding of food constituents that improve human health and nutrition will make possible the development of food products with improved nutritional value. Advances in knowledge of human nutrition can be rapidly utilized to produce improved food products. Nutritionists must be linked to multi-disciplinary teams of food scientists, biotechnologists and medical experts to address this need.

6. Situation and priorities

Food production and processing is a large business in Arkansas. Approximately 25% of all manufacturing in Arkansas is food processing, representing an $11 billion per year business. There are 232 food processing establishments in Arkansas directly employing over 55,000 people. The Center for Disease Control has estimated that 76 million persons in the United States are affected by food borne illness. The costs for persons infected include those associated with health care for afflicted individuals, costs related to caring for those who are ill, absenteeism from work and school, as well as travel costs to seek medical care. Nationally, Arkansas ranks first in stroke mortality, eighth in mortality due to heart disease and ninth in overall cancer mortality. Sixty-one percent of adults are overweight or obese and 38 percent of children in grades K-12 are overweight or at risk for becoming overweight. Lifestyles are directly related to these diseases. Only about half of Arkansas adults and youth get the recommended amount of daily moderate physical activity and one-fourth of adults smoke. Unhealthy lifestyles, including poor diet, physical inactivity, smoking and substance abuse, cost Arkansas taxpayers hundreds of millions of dollars each year in health care costs and lost productivity. Lifestyle changes can prevent at least 20 percent of annual deaths from heart disease, cancer, stroke and diabetes while lowering lifetime medical costs. Almost fifteen percent of all Arkansas households are food insecure.

Research has shown the importance of nutrition to the developing brain and learning capability of children. When food and nutrients are chronically inadequate, hunger leads to high medical, educational, psychological, economic, and social costs.

The Division of Agriculture research goals for the Food, Nutrition and Health program are achieved through discovery and developmental research in Food Science, Food Safety and human nutrition. The Division's extension goals for Food, Nutrition and Health are achieved through county and state educational programs such as demonstrations, applied research, education booths, presentations, publications, newsletters, web pages, in-service training of county faculty, and news releases. Through consumer education on nutrition and the preparation and selection of more nutritious foods, Cooperative Extension faculty and staff enable Arkansans to make health-promoting choices. The success of our food safety programs is due to our Extension/Research integration and proximity of Extension and Experiment Station faculty/staff who work on new processing ingredients and technologies which are disseminated in Extension workshops, newsletters, roundtables etc. The monthly HACCP Roundtable serves not only state companies but is regional in scope and serves as a model at the national level as an example of food companies cooperating along with USDA to address food safety issues.

7. Assumptions made for the Program

The majorities of the food safety programs are either nationally or state mandated programs such as the Better Process Control School and the ServSafe program, respectively or are at the request of food processing companies and entrepreneurs in Arkansas. Since the programs are driven by our clientele, it is believed that they represent the concerns and needs of food processing industry. It is assumed that since these programs are clientele-driven, they will continue to be important and this concern will be reflected in the attendance and participation of the food processing companies. It is also assumed that the Experiment Station scientists will continue to assist in the delivery of these programs. Finally, it is assumed that by working with agricultural economists and the State Department of Health, we will continue to identify entrepreneurs who will take advantage of our programs, ultimately resulting in the establishment of more food-processing businesses.

One in five Arkansans is without health insurance coverage. Lack of health care professionals and facilities in rural Arkansas limit access to quality health care.

We assume that Arkansans will choose to be active participants in the decisions that affect their health to remain active and healthy. It is assumed that evidence-based education can enable rural individuals and families to better maintain healthy lifestyles and manage physical health.

Nutrition education is based on the belief that:

« Participants have access to and consume specific foods.
« Targeted audiences are willing and able to participate in nutrition education programs.
« Knowledge change can lead to behavior change.
« People will be motivated to learn/change.

8. Ultimate goal(s) of this Program

« Develop new and value added products utilizing Arkansas raw products
« To provide needed research on food and food products in partnership with the food industry
« Improve the efficiency and competitiveness of the Arkansas and U.S. food industry through improvements in processing systems, and increased understanding of food chemistry

Food Safety & Processing:
« Reduce the incidences of food poisoning resulting from processing at both manufacturing and at the restaurant level
« Improve the food processing/quality aspects of manufacturing to foster growth of food companies and entrepreneurs in Arkansas

Health:
« Educate and empower individuals and families to adopt healthy behaviors and lifestyles to promote health and prevent disease
« Educate Arkansans to make informed health and health care decisions to utilize the health care system effectively and reduce health care costs
« Lower the incidence of chronic disease

Nutrition:
« Reduce risk factors for diet-related chronic diseases

9. Scope of Program

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

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	73.0	0.0	12.0	0.0
2008	73.0	0.0	12.0	0.0
2009	73.0	0.0	12.0	0.0
2010	73.0	0.0	12.0	0.0
2011	73.0	0.0	12.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Commercial Food Safety & Processing:
Improve food processing efficiency through an improved understanding of food chemistry
Determine the impact of food processing systems on product quality and food safety attributes
Develop new food products that utilize Arkansas raw products
Increase the research base on improved food processing systems to minimize food pathogens
Improve detection systems for Listeria, Salmonella and other major food pathogens
Identify health related nutritional factors that will improve human health
Develop new food products that have improved nutritional content
Conduct monthly HACCP Round Table meeting.
Conduct food safety workshops.
Conduct Better Process Control School
Conduct Labeling workshop.
Conduct the ServSafe workshop.
Provide online distance education in food safety and manufacturing
Conduct new product development workshop
Provide assistance to small food companies and entrepreneurs in the form of services, nutritional labeling, and consulting.
Conduct culinology workshop
Conduct research

Health: Division of Agriculture faculty will develop, evaluate, and disseminate education programs and curricula, incorporating new research and emphasizing healthy lifestyles. Programs Include:
Walk Across Arkansas (Adults and Youth)
Strong Women
Journey to Wellness
ServSafe

Nutrition:
Extension faculty will reach target audiences through the following nutrition education programs:
Food Stamp Nutrition Education
Expanded Food and Nutrition Education Program
Eating and Moving for Life
Reshape Yourself Healthy Weight Program
Right Bite Cooking School
Delta HOPE Initiative

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

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Train-the-Trainer) • Other 2 (Research)	• Public Service Announcement • Newsletters • Web sites • Other 1 (Grant Development) • Other 2 (Journal Publications)

15. Description of targeted audience

Food Companies
Entrepreneurs & Restaurants
Food Service Employees and/or Food Handlers
Limited Resource Adults & Youth
Minority Adults & Youth
Overweight Adults & Youth
Seniors
Employers & Employees
Child Care Providers
Homeowners
Schools
Other researchers
Students
Extension Specialists
Teaching Faculty
Research funding personnel and agencies
Public

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	96150	104063	202500	8000
2008	96150	106563	202500	8000
2009	96150	109063	202500	8000
2010	96150	111563	202500	8000
2011	96150	114063	202500	8000

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 2 2008 : 2 2009 : 1 2010 : 2 2011 : 2

18. Output measures

Output Target

Number of grants written and funded in support of Food, Nutrition & Health programming & research

2007: 6	2008: 6	2009: 7	2010: 8	2011: 9

Output Target

Number of Food, Nutrition & Health educational sessions

2007: 7000	2008: 7000	2009: 7000	2010: 7000	2011: 7000

Output Target

Number of Food, Nutrition & Health educational exhibits/displays

2007: 550	2008: 550	2009: 550	2010: 550	2011: 550

Output Target

Number of news articles written in support of Food, Nutrition & Health programs

2007: 615	2008: 615	2009: 615	2010: 615	2011: 615

Output Target

Number of field demonstrations conducted to document the effectiveness of scientifically based production information

2007: 5	2008: 5	2009: 5	2010: 5	2011: 5

Output Target

Number of consumers participating in educational short courses or meetings related to sanitation and safety in food handling

2007: 620	2008: 620	2009: 620	2010: 620	2011: 620

Output Target

Number of participants in educational programs leading to certification for food handlers (ServSafe & Better Process Control School)

2007: 535	2008: 535	2009: 535	2010: 535	2011: 535

Output Target

Number of participants in health related educational classes, workshops, seminars and field demonstrations

2007: 10514	2008: 10514	2009: 10514	2010: 10514	2011: 10514

Output Target

Number of participants in monthly HACCP roundtable

2007: 30	2008: 30	2009: 30	2010: 30	2011: 30

Output Target

Number of ServSafe classes offered

2007: 20	2008: 20	2009: 20	2010: 20	2011: 20

Output Target

Number of hits on Food, Nutrition & Health websites

2007: 300	2008: 350	2009: 400	2010: 450	2011: 500

Output Target

Number of non-duplicated Food, Nutrition & Health 4-H Youth programs delivered

2007: 200	2008: 225	2009: 250	2010: 250	2011: 250

Output Target

Number of non-duplicated participants in Food, Nutrition & Health 4-H Youth programs

2007: 59000	2008: 50000	2009: 51000	2010: 55000	2011: 55000

Output Target

Number of Food, Nutrition & Health in-service trainings conducted

2007: 10	2008: 10	2009: 10	2010: 10	2011: 10

Output Target

Number of Arkansas Commodity Board Grants

2007: 4	2008: 4	2009: 4	2010: 4	2011: 4

Output Target

Number of federal grants and contracts

2007: 6	2008: 6	2009: 7	2010: 8	2011: 9

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of research projects conducted related to Food, Nutrition & Health

Outcome Type: Short

2007: 17	2008: 17	2009: 17	2010: 17	2011: 17

Outcome Target

Number of participants who indicated that they increased their knowledge related to Food, Nutrition & Health following an educational class, seminar, or workshop

Outcome Type: Short

2007: 22000	2008: 22000	2009: 22000	2010: 22000	2011: 22000

Outcome Target

Number of participants receiving certification for Better Process Control School

Outcome Type: Short

2007: 28	2008: 28	2009: 28	2010: 28	2011: 28

Outcome Target

Percent of participants who increased knowledge of chronic disease prevention

Outcome Type: Short

2007: 60	2008: 65	2009: 70	2010: 75	2011: 80

Outcome Target
Number of participants who indicate that they have gained new knowledge on a targeted personal development behavior

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
4800	4800	4800	4800	4800

Outcome Target
Number of 4-H Journals completed in Food, Nutrition & Health

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
130	140	140	145	150

Outcome Target
Number of 4-H Youth projects completed in Food, Nutrition & Health

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
200	225	225	250	275

Outcome Target
Number of 4-H Youth participants who learned self-responsibility life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
225	250	300	300	325

Outcome Target
Number of 4-H Youth participants who learned healthy lifestyles life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
300	350	350	400	450

Outcome Target
Percent increase in knowledge of healthy food choices among nutrition program participants

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
55	60	65	70	75

Outcome Target
Percent of county and state Extension FCS/Nutrition educators and other public and private representatives involved in discussions regarding public and organizational policies, regulations and industry practices that are barriers to dietary quality and physical activity

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
10	15	20	25	25

Outcome Target
Number of Refereed Journal Publications

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
30	30	30	32	32

Outcome Target
Number of food service managers who report improved food handling practices within a commercial establishment

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
40	40	40	40	40

Outcome Target
Number of growers, producers, distributors, or retailers implementing one or more practices to minimize food safety hazards

Outcome Type: Medium

2007:	35	2008:	35	2009:	35	2010:	35	2011:	35

Outcome Target
Percent of individuals who increased walking activities from less than 3 times per week to 3 or more times per week as a result of completing an Extension program

Outcome Type: Medium

2007:	70	2008:	70	2009:	70	2010:	70	2011:	70

Outcome Target
Percent of individuals that exchanged at least two unhealthy lifestyles for healthy ones as a result of completing an Extension program

Outcome Type: Medium

2007:	60	2008:	60	2009:	60	2010:	60	2011:	60

Outcome Target
Percent of individuals who increased strength training activities from less than 3 times per week to 3 or more times per week as a result of completing Extension program

Outcome Type: Medium

2007:	75	2008:	75	2009:	75	2010:	75	2011:	75

Outcome Target
Percent of individuals who increased aerobic exercise activities from less than 3 times per week to 3 or more times per week as a result of completing an Extension program

Outcome Type: Medium

2007:	70	2008:	70	2009:	70	2010:	70	2011:	70

Outcome Target
Percent of individuals who reported they now get 30 minutes of moderate physical activity on most days as a result of completing an Extension program

Outcome Type: Medium

2007:	65	2008:	65	2009:	65	2010:	65	2011:	65

Outcome Target
Number of food processing and safety laboratory services provided

Outcome Type: Medium

2007:	45	2008:	45	2009:	45	2010:	45	2011:	45

Outcome Target
Number of Nutrition labels developed

Outcome Type: Medium

2007:	105	2008:	115	2009:	125	2010:	130	2011:	132

Outcome Target
Percent of participants adopting a targeted personal development behavior

Outcome Type: Medium

2007:	65	2008:	65	2009:	65	2010:	65	2011:	65

Outcome Target
Number of journal articles accepted

Outcome Type: Medium

2007:	10	2008:	10	2009:	10	2010:	10	2011:	10

Outcome Target
Percent increase in adoption of healthy food practices among nutrition program participants

Outcome Type: Medium

2007:	50	2008:	50	2009:	55	2010:	60	2011:	65

Outcome Target
Percent increase in use of a variety of food resources to reduce costs among nutrition program participants

Outcome Type: Medium

2007:	25	2008:	30	2009:	35	2010:	40	2011:	45

Outcome Target
Number of county and state Extension FCS/Nutrition educators involved with other public and private representatives in discussions regarding needed changes in laws, policies, and practices related to dietary quality and physical activity

Outcome Type: Medium

2007:	5	2008:	10	2009:	15	2010:	20	2011:	25

Outcome Target
Number participants reporting reduction in body weight after completing a nutrition education program

Outcome Type: Long

2007:	300	2008:	350	2009:	400	2010:	450	2011:	500

Outcome Target
Number of participants reporting a reduction in blood pressure after completing a nutrition education program

Outcome Type: Long

2007:	100	2008:	125	2009:	150	2010:	175	2011:	200

Outcome Target
Number of participants reporting a reduction in blood cholesterol after completing a nutrition education program

Outcome Type: Long

2007:	75	2008:	100	2009:	125	2010:	150	2011:	175

Outcome Target
Number of participants reporting a reduction in blood glucose after completing a nutrition education program

Outcome Type: Long

2007:	100	2008:	125	2009:	150	2010:	175	2011:	200

Outcome Target
Number of revised and or adoption of new public laws and organizational policies and practices that support sustained improvement of diet quality and physical activity for Arkansas citizens

Outcome Type: Long

2007:	1	2008:	2	2009:	2	2010:	3	2011:	3

Outcome Target
Business start ups

Outcome Type: Long

2007:	1	2008:	1	2009:	1	2010:	1	2011:	1

Outcome Target
Number of new food businesses started

Outcome Type: Long

2007:	10	2008:	13	2009:	14	2010:	20	2011:	22

Outcome Target
Number of 4-H Youth awarded post secondary scholarships related to foods, nutrition, and health

Outcome Type: Long

2007:	5	2008:	6	2009:	6	2010:	7	2011:	7

Outcome Target
Percent of participants who report an improved quality of life as a result of using a targeted personal development behavior

Outcome Type: Long

2007:	50	2008:	50	2009:	50	2010:	50	2011:	50

20. External factors which may affect outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Description
{NO DATA ENTERED}

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

Description
Some educators will utilize pre- and post-tests and some will use retrospective post-tests, depending on their program and target audiences. Case studies will be utilized for evaluation of environmental and systemic long-term program outcomes.

22. Data Collection Methods

- Sampling
- Whole population
- Mail
- On-Site
- Unstructured
- Observation
- Other (Self-reported data & sec. data)

Description

This evaluation plan will be implemented during the five-year plan of work. Health outcome data such as weight change, blood pressure, cholesterol and glucose will be collected through targeted samples of persons completing nutrition education programs.

1. Name of the Planned Program

Natural Resources & Environment

2. Program knowledge areas

- 111 10% Conservation and Efficient Use of Water
- 124 5% Urban Forestry
- 133 15% Pollution Prevention and Mitigation
- 123 25% Management and Sustainability of Forest Resources
- 112 15% Watershed Protection and Management
- 135 5% Aquatic and Terrestrial Wildlife
- 102 5% Soil, Plant, Water, Nutrient Relationships
- 101 5% Appraisal of Soil Resources
- 605 15% Natural Resource and Environmental Economics

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

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

5. Brief summary about Planned Program

Planned programs in the Division of Agriculture will continue to focus on the primary problems of forest productivity, forest health, soil health, water quality and quantity, and animal waste management. Multi-disciplinary research teams will be utilized to address these complex environmental problems. Strong linkages are needed with state agencies and policymakers to provide the necessary research base to address complex natural resource issues. Industry-university coalitions must address environmental issues along with special interest groups and under-served populations.

In response to new State and Federal (CAFO) regulatory guidelines, the UACES has developed a certification training program for nutrient management planners and nutrient applicators. In 2005, 0ver 2200 planners and applicators were trained for State certification. The UACES has been involved in developing a risk assessment tool for reducing Phosphorus loss to streams in Poultry producing areas as part of a lawsuit settlement. On the voluntary front, the UACES is developing a program with the goal of assisting r agricultural producers and landowners with integrating environmental goals and regulations as part of farm planning. It will also promote a more integrated approach to on-farm natural resource management to include forestry, wildlife, and ecological sustainability as part of the planning process.

As environmental and natural resource concerns shift, so will our educational efforts.

Forest Resource Management has been a long lasting program of the UA Division of Agriculture. Workshops, short courses, meetings, publications, and field days will continue as touchstones of the program. As access to technology expands the program can be delivered via the web, satellite, and other electronic media. The county agents located in each county of the State are central to the program as well. County agents develop and deliver forestry meeting, workshops, and field days focused on issues important to their local clientele and leadership. State Extension faculty will continue to work closely with county level programs as well as with stakeholders at the State level including the Arkansas Forestry Commission, the Arkansas Forestry Association, the Arkansas Game & Fish Commission, and other key natural resource groups to deliver the program and make key changes when new unforeseen issues arise. Extension programs and research efforts in the forest resource management program area are implemented through the Arkansas Forest Resources Center. The goal of the Forest Resource Management program, through the Arkansas Forest Resources Center, is to develop and deliver programs in research & extension that enhance and insure the sustainability of forest-based natural resources. The program therefore, is broadly defined to include a vast array of topics, issues, and strategies aimed at promoting the sustainable and wise use of Arkansas' forest resources.

6. Situation and priorities

As the natural state, Arkansas has abundant natural resources. Tourism is an important and growing part of the state's economy. More than 50% of the state's land area remains forested and outdoor recreation is important to many Arkansas residents and visitors. Development of crop and animal production systems that minimize the impact on the land and water resources of the state remains a high priority.

Soil and water resources in our richest agricultural areas are degrading over time requiring increased inputs to maintain maximum productivity. Salinity and pH of some delta soils have increased due to irrigation with water of poor quality and soil organic matter content has declined due to excessive tillage. A number of Arkansas counties have been designated as critical water use areas including our most productive rice producing areas.

The size of our poultry industry has created animal waste issues that must be addressed to protect our water resources. In some areas litter production exceeds available pasture land for use as a fertilizer. Although poultry litter makes a valuable soil amendment, litter production occurs in areas distant from row crop areas that would benefit from use of the litter. Although research is addressing short term mitigation strategies, a long term approach remains an elusive goal if we are to address these issues in a comprehensive manner in partnership with

state regulatory agencies and policymakers.

Excess nutrients in Northwest Arkansas - Arkansas Acts 1059 and 1061 of 2003 identifies nutrient sensitive areas in the state, designates them as Nutrient Surplus Areas, and requires all nutrient applications (whether manure or commercial fertilizer, or agricultural or residential) to be done according to a nutrient management plan or an approved protective use rate. Arkansas's forest resources provide a diversity of important benefits including wood products, wildlife habitat, watershed protection, and aesthetic values. Forests represent approximately 56% of the State's land base. Although the forest products industry is one of the largest industries in the State, most of the forest land is owned by non-industrial private forest or family forest landowners. Forest sustainability, forest health, urban encroachment, loss of biodiversity, watershed protection and conservation are issues that serve as a counter-point to forest resource production.

One new issue is the development of alternative energy sources including biomass protection from forests. Although research into bio-fuel production is on going, key questions remain unanswered. As people move to the outlying areas previously managed as working forests, some negative impacts can result including increased risk from wildfire, loss of habitat, loss of biodiversity, and significant changes in ownership patterns, and even changes to vital watershed functions. Although fire protection and the National FireWise programs are active in the state, more research in the urban-rural interface arena is needed.

7. Assumptions made for the Program

Environment & Natural Resources:

The University of Arkansas, Division of Agriculture will continue to have strong relationships among state and federal natural resource agencies - Evidence: The Division of Agriculture is involved in several formal partnerships such as the Arkansas Conservation Partnership; The Division helps support a Regional Extension liaison to EPA. The University of Arkansas, Division of Agriculture will continue to be well connected to Regional (multi-state) water quality efforts – Evidence: The UA-CES continues to participate to the Southern Regional CSREES project. The University of Arkansas, Division of Agriculture provides solutions to natural resource and environmental concerns through the integrated missions of research, education, and Extension outreach - Evidence: The formation and functioning of the UA Environmental Task Force that meets monthly to quarterly to ensure this integrated approach. The UA-Division of Agriculture will continue to seek financial support in our effort to address the key issues mentioned above - Evidence: During the past 5 years the UA-CES has received over 3.5 million dollars in outside funding. The UA-CES will continue to produce timely educational products - Evidence: The UA-CES led a multi state and federal agency effort to develop the Arkansas Nutrient Management Planning Guide and the Arkansas Nutrient Applicator Guide to help citizens comply with new State nutrient management and application laws.

Forestry:

The University of Arkansas, Division of Agriculture will continue to have strong relationships among state and federal natural resource agencies - Evidence: The Division of Agriculture works with numerous State and Federal Natural Resource Agencies including the Arkansas Forestry Commission and the US Forest Service. The University of Arkansas, Division of Agriculture provides solutions to forest resource management concerns through the integrated missions of research, education, and extension outreach .The UA-CES will continue to produce timely educational products.

8. Ultimate goal(s) of this Program

Environment & Natural Resources:

« Public understanding and support for water resource development and quality protection on a regional and/or watershed basis.
« Economical and abundant sources of water for sustaining the lives and economic well being of Arkansas citizens.
« Continued collection of scientifically defensible data for the analysis of the water quality and quantity circumstance across Arkansas.
« Development of technologies that provide cost effective alternatives for protecting water quality and increasing water use efficiency.
« An environmentally defensible state water development and protection strategy for use of the state's water resources, based primarily in a voluntary and incentive driven approach.
« Water use and quality regulations that protect the resource while not adding a significant financial burden to Arkansas families, business and industry.
« Coordinated efforts to use the 2005 drought as a planning tool in preparation for solving the water supply problems identified as a result.
« An expanded financial capacity to assist local governments and development authorities in building the needed infrastructure to protect water quality and deliver safe drinking water to the consuming public.
« Interstate communication and cooperation that produces tangible benefits for the cooperating partners in the protection of water quality and supplies.
« Continued research and public education regarding major sources of water quality degradation and alternative protection strategies.

Forest Resources Management Program:

« Family forest landowners will understand the value of their forest resources: both the timber and non-timber values. As a result, forest landowners will be able to make better informed decisions concerning the conservation, management and marketing of their forest resources.
«

9. Scope of Program

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

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	15.0	0.0	12.0	0.0
2008	15.0	0.0	12.0	0.0
2009	15.0	0.0	12.0	0.0
2010	15.0	0.0	12.0	0.0
2011	15.0	0.0	12.0	0.0

Outputs for the Program

13. Activity (What will be done?)

4-H Rice for Ducks programs
Arkansas Acres for Wildlife
Continued education and development support for Farm and Home*A*Syst educational materials
Continued leadership development efforts in the "Building Common Ground" and "Conflict Resolution
Environmental management educational programs
Geographic Information Systems (GIS) and Geographic Positioning Systems (GPS) training
Master Farmer Curriculum is being developed for workshops
Nutrient Management Training notebook for certification training
Nutrient Management Planning Guide for certification training
Nutrient Management Website
Nutrient applicator guide for certification training
Nutrient applicator training notebook for certification training
Nutrient Management Fact sheets
Nutrient management planning workshops
One-on-one consultations
Nutrient applicator workshops
Field Days
Farm Visits
Demonstrations
Educational Meetings
Farm*A*Syst/Home*A*Syst
Link to the Southern Region SARE program
Natural resource conservation and environmental protection education
News-articles
Newsletter
Water, forage, hay, manure, and soil testing
Watershed water quality projects

Well testing
Wildlife education
Geographic Information Systems (GIS) and Geographic Positioning Systems (GPS) training
Water conservation education programs conducted in "Critical Water Use Areas"
Precision agriculture
Reducing urban non-point source pollution through proper lawn care
Small farm programs
Watershed water quality projects
Web-based Education
Water conservation through proper irrigation management and scheduling

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

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Symposiums and Short Courses) • Other 2 (Landowner Visits)	• Public Service Announcement • Newsletters • Web sites • Other 1 (Radio & Print Media) • Other 2 (Training Manuals)

15. Description of targeted audience

4-H Club Youth
Agri Business
Row Crop Agricultural Producer Organizations
Row Crop Agricultural Producers
Certified Crop Advisors
Conservation District Directors
Consultants
Landowners
School Youth
State Agency personnel
Watershed Organizations
Wildlife Organizations
Private nutrient applicator
Commercial nutrient applicator
Livestock producers
Livestock industry personnel
Livestock producer organizations
General public
Other researchers
Students
Extension specialists
Teaching faculty
Research funding personnel and agencies

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	5000	185000	0	0
2008	5000	186000	0	0
2009	5000	187000	0	0
2010	5000	187000	0	0
2011	5000	187000	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 1 2008 : 2 2009 : 2 2010 : 2 2011 : 3

18. Output measures

Output Target

Number of clientele participating in educational meetings, workshops, and seminars for row crop agriculture

2007: 450 2008: 450 2009: 500 2010: 500 2011: 600

Output Target

Number of plan writers trained

2007: 50 2008: 70 2009: 90 2010: 120 2011: 150

Output Target

Number of private nutrient applicators trained

2007: 1000 2008: 1200 2009: 1400 2010: 1600 2011: 1800

Output Target

Number of commercial applicators trained

2007: 100 2008: 120 2009: 150 2010: 180 2011: 200

Output Target

Educational meetings, demonstrations, farm visits, and/or field days held to educate clientele on uses of GIS and GIS applications in production agriculture (i.e., yield monitoring, product evaluation, grid soil sampling, disease scouting, and field

2007: 20 2008: 20 2009: 20 2010: 20 2011: 20

Output Target

Educational meetings, demonstrations, farm visits, and/or field days held to educate clientele on uses of GIS and GPS in natural resource management (i.e. forest management, watershed characterization, water quality protection, wetland protection

2007: 15 2008: 15 2009: 15 2010: 15 2011: 15

Output Target

Number of clientele participating in GIS and GPS educational meetings, workshops, and seminars

2007: 100 2008: 120 2009: 150 2010: 200 2011: 250

Output Target

Number of adult participants who attend presentations, workshops or other public outreach educational programs related to water quality, watershed dynamics, aquatic ecology or pollution prevention

2007: 2000 2008: 2000 2009: 2000 2010: 2000 2011: 2000

Output Target

Number of Cooperative Extension Service educational printed materials requested and/or distributed related to water quality, watershed dynamics, and aquatic

2007: 3000 2008: 3000 2009: 3000 2010: 3000 2011: 3000

Output Target

Hazardous household wastes (tons) collected at community collection or drop-off sites such as pesticides, fertilizer, paint, automotive fluids, solvents, cleaners, tires, batteries, etc.

2007: 20 2008: 25 2009: 30 2010: 40 2011: 50

Output Target

Number of households potentially impacted by educational efforts

2007: 800 2008: 1000 2009: 1200 2010: 1400 2011: 1600

Output Target

Number of Cooperative Extension Service public outreach programs related to groundwater quality, groundwater dynamics or pollution prevention

2007: 10 2008: 15 2009: 20 2010: 20 2011: 20

Output Target

Number of adult participants who attend presentations, workshops or other public outreach educational programs related to groundwater quality, groundwater dynamics or pollution prevention

2007: 1800 2008: 2000 2009: 2200 2010: 2400 2011: 2500

Output Target

Number of personal contacts including individual requests for information related to groundwater quality, groundwater dynamics, water quality, watershed

2007: 1000 2008: 1100 2009: 1200 2010: 1300 2011: 1400

Output Target

Number of Cooperative Extension Service educational printed materials requested and/or distributed related to groundwater, groundwater dynamics or pollution prevention

2007: 3000 2008: 3000 2009: 3000 2010: 3000 2011: 3000

Output Target

Number of backflow prevention devices installed in groundwater wells

2007: 50 2008: 75 2009: 100 2010: 100 2011: 100

Output Target

Number of Cooperative Extension Service public outreach programs related to groundwater resources, aquifer depletion or water conservation

2007: 10 2008: 10 2009: 10 2010: 10 2011: 10

Output Target

Number of participants who attend presentations, workshops, school programs, camps or other public outreach educational programs related to groundwater resources, aquifer depletion or water conservation

2007: 5000 2008: 5000 2009: 5000 2010: 5000 2011: 5000

Output Target

Number of personal contacts including individual requests for information related to groundwater resources, aquifer depletion or water conservation

2007: 1000 2008: 1000 2009: 1000 2010: 1000 2011: 1000

Output Target

Number of Cooperative Extension Service educational printed materials requested and/or distributed related to groundwater resources, aquifer depletion or water conservation

2007: 5000 2008: 5000 2009: 5000 2010: 5000 2011: 5000

Output Target

Number of Cooperative Extension Service public outreach programs related to stormwater education

2007: 50 2008: 50 2009: 80 2010: 100 2011: 100

Output Target

Number public outreach educational programs related to stormwater management

2007: 30 2008: 30 2009: 30 2010: 30 2011: 30

Output Target

Number of Cooperative Extension Service educational printed materials requested and/or distributed related to stormwater management

2007: 5000 2008: 5000 2009: 5000 2010: 5000 2011: 5000

Output Target

Number of educational meetings held with forestry industry representatives, State and Federal agency personnel, Arkansas Forestry Association, Arkansas Forest Resource Center and UA Cooperative Extension faculty to identify forest landowner education issues and plan education programs

2007: 10 2008: 10 2009: 10 2010: 10 2011: 10

Output Target

Number of landowner education meetings conducted

2007: 20 2008: 20 2009: 25 2010: 25 2011: 30

Output Target

Number of landowners attending workshops and educational meetings

2007: 500 2008: 550 2009: 600 2010: 650 2011: 700

Output Target

Number of demonstrations conducted

2007: 20 2008: 20 2009: 20 2010: 20 2011: 20

Output Target

Number of individuals attending demonstrations

2007: 100 2008: 150 2009: 200 2010: 250 2011: 300

Output Target

Number of Forestry Field days

2007: 6 2008: 6 2009: 6 2010: 6 2011: 8

Output Target

Number of individuals attending field days

2007: 400 2008: 450 2009: 500 2010: 550 2011: 600

Output Target

Number of clientele receiving newsletters about forestry and forest management

2007: 1000 2008: 1000 2009: 1000 2010: 1500 2011: 1500

Output Target

Number of county agents receiving the Arkansas Timber Market Report

2007: 77 2008: 77 2009: 77 2010: 77 2011: 77

Output Target

Number of radio stations carrying bi-monthly Arkansas Timber Market Report & Update

2007: 24 2008: 24 2009: 24 2010: 24 2011: 24

Output Target

Number of Arkansas Commodity Grants received

2007: 5 2008: 7 2009: 7 2010: 8 2011: 8

Output Target

Number of federal grants and contracts

2007: 10 2008: 10 2009: 10 2010: 10 2011: 10

Output Target

Number of communities that participate in workshops, school programs, camps or other

2007: 50 2008: 50 2009: 50 2010: 50 2011: 50

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of refereed journal publications

Outcome Type: Short

2007: 30 2008: 30 2009: 30 2010: 35 2011: 35

Outcome Target

Number of landowners indicating an increased knowledge of forest management for wildlife

Outcome Type: Short

2007: 300 2008: 400 2009: 450 2010: 500 2011: 500

Outcome Target
Number of livestock operations impacted by educational efforts

Outcome Type: Medium

2007:	150	2008:	200	2009:	250	2010:	300	2011:	400

Outcome Target
Number of clientele who adopt GIS and GPS for natural resource management, watershed characterization, and general map making and spatial analysis

Outcome Type: Medium

2007:	50	2008:	50	2009:	75	2010:	75	2011:	75

Outcome Target
Number of clientele who adopt GIS and GPS for production agriculture purposes including aerial applicators

Outcome Type: Medium

2007:	200	2008:	200	2009:	200	2010:	200	2011:	200

Outcome Target
Number of clientele who adopt agricultural best management practices to reduce impact of row crop agriculture on surface water quality

Outcome Type: Medium

2007:	300	2008:	350	2009:	400	2010:	450	2011:	500

Outcome Target
Number of clientele who adopt best management practices to reduce impact of livestock agriculture on surface water quality

Outcome Type: Medium

2007:	1200	2008:	1400	2009:	1600	2010:	2000	2011:	2400

Outcome Target
Number of business start ups

Outcome Type: Long

2007:	1	2008:	1	2009:	2	2010:	1	2011:	2

Outcome Target
Number of acres impacted by Natural Resources & Environmental educational efforts

Outcome Type: Long

2007:	35000	2008:	42000	2009:	54000	2010:	66000	2011:	70000

20. External factors which may affect outcomes

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

Description
Forest Resource Management is an extremely broad program easily impacted by all of the factors listed above.

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- During (during program)

Description

Comprehensive program and departmental reviews for research, extension and teaching programs are conducted on a five- to seven-year cycle.

22. Data Collection Methods

- Sampling
- Telephone
- On-Site
- Unstructured
- Observation

Description

{NO DATA ENTERED}

1. Name of the Planned Program

Pest Management

2. Program knowledge areas

- 403 10% Waste Disposal, Recycling, and Reuse
- 721 10% Insects and Other Pests Affecting Humans
- 212 10% Pathogens and Nematodes Affecting Plants
- 216 30% Integrated Pest Management Systems
- 723 10% Hazards to Human Health and Safety
- 312 20% External Parasites and Pests of Animals
- 211 10% Insects, Mites, and Other Arthropods Affecting Plants

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

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

5. Brief summary about Planned Program

Insect, weed and disease pests affect all the major agricultural commodities in Arkansas including row-crops (cotton, wheat, rice, soybeans and corn), livestock, poultry, fruit and vegetable crops, ornamental shrubs, trees, and turf. The loss of many traditional low cost animal and crop protection chemicals without replacement by effective alternatives limits available management options. The advent of new limitations to meet the requirements of the Food Quality Protection Act will limit crop protection options further. New discoveries from research on host plant resistance and pest biology continue to provide alternatives but must be integrated into our crop production systems. Significant work remains to be done to minimize losses from pests, diseases and weeds in all major animal and crop commodities of importance to Arkansas.

Integrated pest management (IPM) is an essential research and educational program that helps agricultural producers and homeowners control pests more efficiently and reduce reliance on pesticides. Increasing concerns for producers and homeowners include pesticide drift, soil and water quality; pesticide resistance, and the utilization of Genetically Modified Organisms (GMO).

Although most of the destructive pests are endemic, an increasing numbers of problem species are finding their way to the United States from outside our borders. Adapting Division of Agriculture activities to cope with these threats is a primary consideration for planning future pest management research and extension efforts.

Continued use of pesticides leads to resistance and overuse of pesticides which can lead to contamination of water supplies. Division of Agriculture research scientists and Extension specialists conduct research and train county agents on the latest pest management research. Pest management and pesticide applicator training is then conducted statewide each year by county agents and specialists through various means to inform producers and homeowners about recommended effective and environmentally friendly chemical and non-chemical research based pest management and pesticide use practices.

The human IPM program focuses on the management of insect pests that impact humans, and has resulted in considerable benefit to the citizens of the state. These insect pests pose both direct and indirect threats to human health and well-being, as well as having the potential to adversely impact the value of property.

6. Situation and priorities

Major row crops, forages, livestock, poultry and fruit, vegetable, turf crops and ornamentals in Arkansas are all intensively managed relative to input costs (pest control, feed, fertilizer, irrigation, etc.) to provide the highest profit margin possible for producers. The monoculture production system in many parts of the state has resulted in a number of severe pest problems. Of particular concern are various plant insect pests, plant diseases, weeds, nematodes, flies, and fire ants .Correct identification of these pests, and the availability of research-based information for control are of paramount importance for the continued success of our producers.

Each year many new crop cultivars come to the marketplace, generally with little information on pest or pesticide resistance. A goal of this program is to provide our growers with a rapid and accurate assessment of the resistance of new cultivars to the most common pests. The pest management program strives to provide support to clientele through applied research, leading to field demonstrations, educational materials and updated management recommendations to match local situations.

The intense use of pesticides in these commodities generates substantial market opportunities for pesticide companies, resulting often in the overuse of pesticides by growers and homeowners. In recent years, overuse of pesticides has created increasing problems with pesticide resistant organisms. Farmers and homeowners end up paying for wasted inputs and "super" pests in the short and long term. The incorrect use of pesticides and home pest management remedies can also contaminate surface and ground water.

By federal and state laws, applicators of restricted use pesticides must be certified or work under the direct supervision of a certified

applicator who must be periodically recertified by attending educational programs on pesticide safety, IPM, etc. Arkansas, Louisiana, and Mississippi have chosen Pesticide Applicator Training as a multi-state cooperative effort.

As the urban population increases, more emphasis and demand will be placed on growing desirable and profitable horticultural crops for both large businesses and backyard gardeners. Gardening as a hobby or a necessity, continues to grow in popularity among urban and retired Arkansans. This creates an increase in the demand for expertise and training in the area of pest management which may impact everyone from the backyard gardener to the commercial producer.

The Human IPM program focuses on education of homeowners in proper methods of management of termites, fire ants, cockroaches, bees and other pests of human-health concern. The cases of West Nile Virus peaked at 42 in Arkansas during 2002 with 5 deaths recorded. Following the initiation of the Extension education program on mosquito control/disease prevention, human cases of West Nile fever dropped and no deaths were recorded.

7. Assumptions made for the Program

This program is based on the county agent system and on basic and applied research funded by federal formula funds, grower check-off programs, competitive grants, and industry grants-in-aid. This system has been proven effective since 1914. Growers trust the Division of Agriculture for research based, unbiased, accurate, and up-to-date information. Well-trained crop consultants are more and more becoming a mainstay of the farmers' source of information. Considerable effort has been focused over the last few years in educating this segment of the industry as well as our county agents. Research-based information from field and greenhouse trials is provided to specialists and from them to county agents annually in the fall and early winter for use in educational programs via meetings, newsletters, annual printed and electronic updates and various software programs developed for growers and homeowners statewide. Effective education is best done at the local level by direct contact using experiential methods. This system has been successful in the past but must continually be adjusted as biological factors and production practices evolve.

Since 1976, the Pesticide Safety Education Program has provided the necessary training for certified applicators. Surveys of attendees have indicated that most who attend change their pesticide practices as a result. This program contacts/impacts more pesticide applicators than any other Extension program, but continued success is dependent upon sufficient funding. Federal funds have been cut by over 33% in the last few years. The program will continue to work only so long as the required funding is provided.

Although county agents have a more comprehensive knowledge of pest management in major commodities and than horticulture crops, real needs for emphasis in the ornamental and vegetable arena are being realized. Agents are making more "house calls" for homeowner pest problems than ever before. Homeowner questions regarding biotic and abiotic diseases in horticultural plants are putting an increasing demand on Division of Agriculture time and efforts. Education and training of faculty, use of the internet and other electronic outreach methods will better equip them to address these problems.

Research demonstrates the benefit of pest management for the support of human health and well-being. This program focuses on increasing clientele recognition and adoption of IPM practices. The approaches we use include direct delivery of methods as well as indirect methods, recognizing each method has its own best applicability. Education of the public also requires replacing hysteria and myths associated with some pests (particularly Africanized bees) with fact-based recommendations about management and behavioral changes by the public.

8. Ultimate goal(s) of this Program

« To reduce the impact of major pests on animal and crop production systems and urban landscapes in Arkansas
« To make clientele more aware of critical crop insect, disease, and weed problems that they may face in the state and improve their understanding and management of same.
« To reduce accidental pesticide exposures and pesticide complaints, and to promote environmental improvements in agricultural and urban areas in Arkansas.
« To reduce overall pesticide use – or at least make pesticide use as efficient as possible, and prevent or minimize periodic disasters caused by pest outbreaks resulting in highly stable and efficient crop and livestock production.
« To provide near-real-time cultivar reaction information available to growers and others involved in Arkansas crop production.
« To increase the knowledge and awareness of insects, plant diseases and weeds and their impact for urban and commercial clientele and to educate and train Extension personnel to address pest problems.
« Consistent application of Division of Agriculture recommendations by the public to reduce incidence of human-health issues caused by insects, while decreasing over-reliance on and misuse of pesticides

9. Scope of Program

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

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	28.0	0.0	20.0	0.0
2008	28.0	0.0	20.0	0.0
2009	28.0	0.0	20.0	0.0
2010	28.0	0.0	20.0	0.0
2011	28.0	0.0	20.0	0.0

Outputs for the Program

13. Activity (What will be done?)

The University of Arkansas Division of Agriculture research program in pest management will reduce the impacts of major pests by:

« Increasing the knowledge base on major pests, diseases, and weeds of importance to Arkansas

« Developing improved crop protection strategies and technologies for our major crop systems.

« Integrating new knowledge in plant and animal genomics and basic science into the development new pest management strategies.

Extension Pest Management education will be delivered through the following programs and methods, targeting issues specific to Arkansas:

« The Cotton Nematode and Disease Management Program supports and assists county extension programs in the state, particularly the Delta region to better identify, understand, and manage major cotton diseases in Arkansas.

« The Pesticide Applicator Training Program provides initial certification and recertification training sessions for private and commercial/non-commercial pesticide applicators statewide each year. County agricultural Extension agents provide the training for private applicators (farmers), and the pesticide assessment specialist is responsible for training the commercial/non-commercial applicators.

« The Rice and Soybean IPM Programs offer simple grant funding for county extension education efforts focused primarily on integrated pest management of rice and soybean principles. County extension education efforts are aimed at improving rice and soybean production and pest management through the adoption of scientifically-based management recommendations.

« The Rice, Soybean, and Wheat Pathology Programs assist county extension programs in the state educate growers and others involved to better identify, understand and manage the many rice, soybean, and wheat diseases in Arkansas.

« The Soybean Cultivar Disease Screening Program assists soybean producers in selecting the most appropriate soybean cultivars for their farms to avoid costly losses from soybean diseases and nematodes.

« Urban and commercial horticulture educational programs are delivered to train urban and commercial vegetable, ornamental, turf and fruit clientele in the state of Arkansas in the area of best plant disease management practices.

« Human Integrated Pest Management will develop sound recommendations for IPM targeting pests affecting humans, and to deliver the recommendations to a variety of sectors of the public. Pests to be targeted in developing the recommendations include Africanized bees, termites, and fire ants in residential settings. Delivery methods include presentations at educational meetings and workshops, extension publications and newsletters, development of web-based materials and visits to households of affected citizens.

Output/Methods: Grower meetings, training extension agents and crop consultants, educational newsletters, Extension publications, visits to individual growers /homeowners, diagnosis of pest problems, newspaper/magazine /professional journal articles, interviews, field days and demonstrations, web-based information, and/or applied on- farm research.

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

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (On-Farm Research) • Other 2 (Field Days/Diagnostic Services)	• Newsletters • TV Media Programs • Web sites • Other 1 (Scientific/Technical Publication) • Other 2 (Grant Proposals/File Patents)

15. Description of targeted audience

Crop producers
Livestock producers
Division of Agriculture personnel
Agricultural consultants
Agricultural industry personnel
Pesticide applicators
Pest Control Operators
Homeowners
Golf course superintendents
Commercial pest management personnel
Master gardeners
Commercial landscapers
Landscape management staff
Public Health Officials
Other researchers
Students
Extension Specialists
Research Funding Personnel and Agencies
Policy and Decision Makers
General Public

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
2007	78000	65000	0	0
2008	78000	65000	0	0
2009	78000	65000	0	0
2010	78000	68000	0	0
2011	78000	68000	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 2 2008 : 3 2009 : 3 2010 : 3 2011 : 3

18. Output measures

Output Target

Number of Educational Classes

2007: 224	2008: 224	2009: 224	2010: 224	2011: 224

Output Target

Number of one-on-one contacts

2007: 60000	2008: 60000	2009: 60000	2010: 60000	2011: 60000

Output Target

Number of Field Demonstrations

2007: 370	2008: 375	2009: 380	2010: 380	2011: 380

Output Target

Number of farm tours

2007: 60	2008: 60	2009: 60	2010: 60	2011: 60

Output Target

Number of publications written

2007: 15	2008: 15	2009: 15	2010: 15	2011: 15

Output Target

Number of farm visits made

2007: 6000	2008: 6000	2009: 6000	2010: 6000	2011: 6000

Output Target

Number of pesticide applicator education classes

2007: 90	2008: 90	2009: 90	2010: 90	2011: 90

Output Target

Number of homeowner education classes

2007: 50	2008: 50	2009: 50	2010: 50	2011: 50

Output Target

Number of hits on website

2007: 4000	2008: 4000	2009: 4000	2010: 4000	2011: 4000

Output Target

Number of newsletters

2007: 420	2008: 420	2009: 420	2010: 420	2011: 420

Output Target

Number of Research Field Days

2007: 10	2008: 10	2009: 10	2010: 10	2011: 10

Output Target

Number of Workshops

2007: 15	2008: 15	2009: 15	2010: 15	2011: 15

Output Target

Number of Newsletter Articles

2007: 65	2008: 65	2009: 65	2010: 70	2011: 70

Output Target

Number of Arkansas Commodity Board Grants received

2007: 25	2008: 25	2009: 25	2010: 28	2011: 30

Output Target

Number of Federal Grants and Contracts

2007: 20	2008: 20	2009: 20	2010: 25	2011: 25

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Refereed Journal Publications

Outcome Type: Short

2007: 50	2008: 50	2009: 50	2010: 55	2011: 55

Outcome Target

Number of participants becoming aware of IPM strategies

Outcome Type: Short

2007: 4000	2008: 4000	2009: 4000	2010: 4000	2011: 4000

Outcome Target

Number of participants intending to adopt IPM practices

Outcome Type: Short

2007: 4000	2008: 4000	2009: 4000	2010: 4000	2011: 4000

Outcome Target

Number of participants gaining knowledge of integrated pest management practices

Outcome Type: Short

2007: 4000	2008: 4000	2009: 4000	2010: 4000	2011: 4000

Outcome Target

Number of participants gaining knowledge of proper pesticide application practices

Outcome Type: Short

2007: 920	2008: 920	2009: 920	2010: 920	2011: 920

Outcome Target
Number of participants passing commercial pesticide certification exams

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
600	600	650	700	700

Outcome Target
Number of producers adopting one or more IPM practices

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
4000	4000	4000	4000	4000

Outcome Target
Number of homeowners adopting one or more IPM practices

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
230	240	250	270	300

Outcome Target
Number of participants adopting one or more proper pesticide application practices

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
920	920	920	920	920

Outcome Target
Number of diagnostic submissions

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
760	770	780	780	790

Outcome Target
Number of producers using computer assisted programs

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
650	650	650	650	650

Outcome Target
Number of clients using scouting programs

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
258	258	258	258	258

Outcome Target
Number of clientele that have adopted IPM-related practices

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
40	50	50	50	50

Outcome Target
Number of pest monitoring traps utilized

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
216	216	220	220	250

Outcome Target
Business Start Ups

Outcome Type: Long

2007:	1	2008:	2	2009:	1	2010:	2	2011:	1

Outcome Target
Sustained acreage on which integrated methods are adopted and implemented, resulting in improved environmental health

Outcome Type: Long

2007:	0	2008:	0	2009:	0	2010:	0	2011:	0

Outcome Target
Annual soybean yield - bushels per acre

Outcome Type: Long

2007:	38	2008:	38	2009:	38	2010:	38	2011:	38

Outcome Target
Annual Soybean - Value of Production (1,000 dollars)

Outcome Type: Long

2007:	791094	2008:	791094	2009:	791094	2010:	791094	2011:	791094

Outcome Target
Annual Rice (all) yield - pounds per acre

Outcome Type: Long

2007:	6610	2008:	6610	2009:	6610	2010:	6610	2011:	6610

Outcome Target
Annual Rice (all) Value of Production (1,000 dollars)

Outcome Type: Long

2007:	740648	2008:	740648	2009:	740648	2010:	740648	2011:	740648

Outcome Target
Annual Cotton (all) yield - pounds per acre

Outcome Type: Long

2007:	916	2008:	916	2009:	916	2010:	916	2011:	916

Outcome Target
Percent of Acres of soybean acreage receiving herbicide applications

Outcome Type: Long

2007:	95	2008:	95	2009:	95	2010:	95	2011:	95

Outcome Target
Pounds (1,000) of applied herbicides to planted soybean acreage

Outcome Type: Long

2007:	4152	2008:	4152	2009:	4152	2010:	4152	2011:	4152

Outcome Target
Percent of Acres of soybean acreage receiving insecticide applications

Outcome Type: Long

2007:	14	2008:	14	2009:	14	2010:	14	2011:	14

Outcome Target
Pounds (1,000) of applied insecticides to planted soybean acreage

Outcome Type: Long

2007:	344	2008:	344	2009:	344	2010:	344	2011:	344

Outcome Target
Percent of Acres of soybean acreage receiving fungicide applications

Outcome Type: Long

2007:	8	2008:	8	2009:	8	2010:	8	2011:	8

Outcome Target
Pounds (1,000) of applied fungicides to planted soybean acreage

Outcome Type: Long

2007:	21	2008:	21	2009:	21	2010:	21	2011:	21

20. External factors which may affect outcomes

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

Description

Pest management program outcomes will be influenced by changes in the current Farm Bill affecting payments to farmers, land grant university funding from CSREES, increasing fuel costs, downturns in the economy and extreme weather conditions. Any or all of these factors will cause anticipated projected outcome results to vary widely.

21. Evaluation studies planned

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Other (Sec. Data-AR data: NASS)

Description

Longitudinal evaluation will be conducted by subcomponents of this program through various research based methods. Comprehensive programmatic and departmental reviews for research, extension and teaching programs are conducted on a five- to seven- year cycle.

The Pest Management impact evaluation includes a new long-term indicator, “Sustained acerage on which integrated methods are adopted and implemented resulting in improved environmental health.” Data will be collected on this indicator beginning FY 2007, and will continue each year through 2011. No comprehensive historical data exist for this indicator in Arkansas; therefore, there is no valid basis for reasonable adoption projections. Due to this, no projections were submitted in the plan for this indicator.

22. Data Collection Methods

- Sampling
- Mail
- Telephone
- On-Site
- Unstructured
- Observation
- Tests
- Other (Sec. Data-AR data: NASS)

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Plants & Plant Products

2. Program knowledge areas

- 213 10% Weeds Affecting Plants
- 112 10% Watershed Protection and Management
- 205 10% Plant Management Systems
- 101 10% Appraisal of Soil Resources
- 111 10% Conservation and Efficient Use of Water
- 201 10% Plant Genome, Genetics, and Genetic Mechanisms
- 102 10% Soil, Plant, Water, Nutrient Relationships
- 204 10% Plant Product Quality and Utility (Preharvest)
- 203 10% Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 206 10% Basic Plant Biology

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

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

5. Brief summary about Planned Program

Arkansas ranks as one of the primary agricultural states in the nation. Row crops are grown on over six million acres of farm land and, along with forestry, contribute over $3 billion to the state's economy annually. Arkansas is the largest producer of rice in the nation and is a major producer of soybeans, cotton, and soft red winter wheat. Although small in size, fruits and vegetables are a significant and growing industry. Turf, ornamentals and landscape plants are the fastest growing segment of the agricultural industry nationally. Both large and small farms continue to be an important part of the state's economy.

The University of Arkansas, Division of Agriculture strives to increase efficiency of crop and forage production through research and education focusing on best management practices, to ensure that producers remain competitive in the global economy, while protecting our natural resources. Research and educational programs addressing cultivar/hybrid development and selection, soil fertility requirements, production practices, timing of inputs, crop rotation benefits, and irrigation timing are key factors involved in increased crop yields that were seen in the state this past year. Areas of educational emphasis included variety selection, groundwater management and conservation, nutrient management, and controlling of diseases.

Soil, plant, water and nutrient relationships are key factors involved in increasing the efficiency of crop production. Soil testing is the foundation of a sound fertility program and nearly 100,000 soil samples are received at the Soil Lab at Marianna. Soil testing not only provides a guide to develop fertilizer recommendations for the intended crops, but also, together with plant analysis, can aid in the identification of potential problems.

Plant management systems are key to helping producers who are often challenged by the large volume of varieties/hybrids available to find varieties/hybrids that will perform well on their farm. In 2004, 100 wheat varieties, 104 corn hybrids, and 51 grain sorghum hybrids were tested in the Arkansas Variety Testing program. The Cotton Verification Program demonstrated that variety selection can improve income per acre by an average of $100 and that proper timing of cotton harvesting returned $50 to $75 per acre.

Horticulture (commercial production and service industries and recreational/home clientele) contributes to the state's economy and improves the quality of the environment and the quality of life lives for many Arkansans. Existing and new horticulture businesses and farms require training and exposure in new plants and production methods to stay competitive and to develop best management practices. Consumers require training and education in various aspects of home horticulture.

The forage production research and management programs provide research-based information through non-formal educational methods for the sustainability of agricultural production systems to improve Arkansans quality of life.

6. Situation and priorities

Agriculture is a very large and diverse industry in Arkansas. Programs in cotton, rice, wheat, soybean, corn, and grain sorghum are crucial to making Arkansas highly competitive in the global economy. While the 2005 state rice acreage was the largest on record and produced the second best average yield on record, Arkansas rice producers continue to face many challenges in order to produce a profitable crop and maintain sustainability of the land. Currently, Arkansas ranks fourth in the US for cotton production. Soybeans remain the largest (based on planted acreage) row- crop. Since wheat continues to be a profitable crop for many producers, especially on acres where irrigation of row crops is not possible, Arkansas wheat producers are always looking for management practices to reduce production costs and still be able to produce economical high-yielding wheat. A key factor in maintaining high yields and consequently increased competitiveness and profitability

in row crops is weed control. Weed control continues to be a key management decision that rice, corn, wheat and soybean farmers face each season. After variety selection, it is often the first management decision made each year. Failure to control weeds can often nullify other concerns as weed competition has the potential to completely rob crops of profitability. In turf and pasture management, for example, lack of effective weed control is preventing many farmers from taking advantage of the new seeded varieties and the accompanying cost of establishment savings.

Extension and research faculty also work together to identify and implement best management practices in horticulture enterprises and systems, to educate fruit, vegetable, ornamentals, turfgrass, commercial, and consumer clientele to enhance economic development in Arkansas, and to develop a system that is highly competitive in the regional and global economy.

Arkansas' climate and most of its soil and terrain are suited for the production of grasses and legumes necessary to support the livestock industries. Primary forages include tall fescue, clover and bermudagrass. Over 4.6 million acres of pastureland and 1.4 million acres of hay land (total 6 million acres) are managed to enhance livestock production and land stewardship. Livestock producers will benefit from forage management production programs to improve production efficiency and returns.

7. Assumptions made for the Program

While average yields for most commodities grown in Arkansas have increased significantly, Arkansas producers continue to face many challenges in order to produce profitable crops and maintain sustainability of land. The most significant issues include optimum variety selection, diminishing irrigation water quantity, integrated pest management issues, nutrient management, and soil conservation. Many of these issues are addressed through education programs and various verification programs which are providing growers with key recommendations for efficient production, weed control issues, and other resources. Cooperative efforts with grower groups, commodity boards, regulatory agencies, and other organizations also provide valuable feedback in programming on a regional and statewide basis. On-farm research results generate data from which recommendations are derived.

The majority of county Extension Councils in Arkansas have identified horticulture as a major emphasis area for their long range educational program. Horticulture inquiries are an increasing demand on the county agent's time and few have training in these diverse subjects. With support from the state horticulture staff, they will be able to better serve their clientele. New and existing horticultural production and service industries require on-going research and educational assistance in developing and adapting new technology and best management practices.

Because of the abundance of natural resources (water, land, etc.), livestock production will continue to be a major industry in Arkansas. The Cooperative Extension Service continues to develop programming needs through a grass-roots programming effort. Therefore, identifying and implementing programs needed by the producing clientele will address their needs. Livestock producers will face ever changing challenges, and they will look to the UA Division of Agriculture to help them face those challenges.

8. Ultimate goal(s) of this Program

« Develop crop production systems that are sustainable, profitable and competitive in the global marketplace.
« Partner with industry, commodity groups, etc., to facilitate technology development and adoption.
« Initiate cooperative work among scientific disciplines to fine-tune the best management practices over a variety of geographic regions.
« Investigate and address concerns, as they emerge.
« Continue to support strategic partnerships that create value-added benefits for Arkansas' environment and its people.
« Expand programs for effective sustainable agriculture systems.
« Increase and enhance horticulture knowledge and expertise of commercial and consumer audiences and extension staff. Increase number and
« Improve quality and profitability of commercial horticulture operations in the state.
« Increase forage production efficiency.

9. Scope of Program

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

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	69.0	0.0	25.0	0.0
2008	69.0	0.0	25.0	0.0
2009	69.0	0.0	25.0	0.0
2010	69.0	0.0	25.0	0.0
2011	69.0	0.0	25.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Develop and conduct workshops, educational meetings, demonstrations, and field days
Direct clientele contact: on- site visits, phone calls, mail and emails
Develop and produce educational products and materials
Conduct tours and demonstrations
Conduct discovery and applied research
Publish educational materials
Provide diagnostic services
Media work through print, radio, TV and internet
Partnering with commodity associations, groups, Master Gardeners, and traditional and nontraditional groups
Coordination of Master Gardener programs
Develop improved crop production systems that maximize profitability and sustainability

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

Extension	
Direct Methods	Indirect Methods
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Farm Visits/Field Days) • Other 2 (Soil/Water Testing)	• Newsletters • Web sites • Other 1 (Grants/Prof.Publications) • Other 2 (Educate Students/File Patents)

15. Description of targeted audience

Growers/producers
Consultants
Agri Business/Allied Industries
Horticulture production and Service Businesses
Master Gardeners
General Public
Other researchers
Students
Extension Specialists
Teaching faculty
Research funding personnel and agencies
Public

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	190274	419318	0	0
2008	195500	424500	0	0
2009	201000	430000	0	0
2010	206500	436000	0	0
2011	212500	442000	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 10 2008 : 10 2009 : 10 2010 : 10 2011 : 10

18. Output measures

Output Target

Number of agronomic Production Education Meetings (multi-topic)

2007: 234 2008: 240 2009: 245 2010: 250 2011: 255

Output Target

Number of Production Education Meetings that address fertilizer, soil & water management

2007: 27 2008: 27 2009: 30 2010: 30 2011: 32

Output Target

Number of Production Education Meetings that address variety selection

2007: 12 2008: 13 2009: 14 2010: 15 2011: 15

Output Target

Number of Production Education Meetings that address plant monitoring and nutrition

2007: 19 2008: 20 2009: 21 2010: 22 2011: 24

Output Target

Number of Production Education Meetings that address soil and water testing

2007: 9 2008: 9 2009: 10 2010: 10 2011: 11

Output Target

Number of Production Education Meetings that address variety Selection consultations

2007: 37 2008: 38 2009: 39 2010: 39 2011: 40

Output Target

Number of demonstrations/on-farm research

2007: 188	2008: 190	2009: 190	2010: 192	2011: 195

Output Target

Number of farm visits

2007: 364	2008: 364	2009: 364	2010: 364	2011: 364

Output Target

Number of field days

2007: 51	2008: 51	2009: 51	2010: 51	2011: 51

Output Target

Number of informal surveys of participants to measure cultural practice

2007: 18	2008: 18	2009: 20	2010: 20	2011: 22

Output Target

Number of educational meetings, demonstrations, field days, site visits and other group events held to educate commercial and consumer clientele in horticulture

2007: 505	2008: 550	2009: 600	2010: 650	2011: 650

Output Target

Number of educational meetings, demonstrations, farm visits and/or field days held to educate clientele on forage production and grazing management

2007: 2434	2008: 2500	2009: 2500	2010: 2600	2011: 2600

Output Target

Number of hits to plant and plant products web-based educational materials

2007: 6000	2008: 6500	2009: 7000	2010: 7500	2011: 8000

Output Target

Number of Arkansas Commodity Board Grants received

2007: 50	2008: 50	2009: 50	2010: 50	2011: 50

Output Target

Number Federal grants and contracts

2007: 25	2008: 25	2009: 25	2010: 25	2011: 25

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number Refereed Journal Publications

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
100	100	100	100	100

Outcome Target
Number of commercial forage producers who gained awareness related to management technology

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
200	200	200	200	200

Outcome Target
Number of commercial forage producers who gained knowledge related to production practices

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
200	200	200	200	200

Outcome Target
Number of new Master Gardeners trained and certified

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
700	700	700	700	700

Outcome Target
Number of participants who changed or adopted a new commercial forage management practice

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
50	55	60	65	70

Outcome Target
Number of participants who changed or adopted a new forage and/or grazing management practice

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
500	500	500	500	500

Outcome Target
Number of clientele who select improved varieties

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
9882	9900	9950	9990	10000

Outcome Target
Number of clientele using soil testing

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
8731	8750	8760	8775	8880

Outcome Target
Number of clientele using plant testing

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
639	650	655	660	665

Outcome Target
Number of clientele using water testing

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
82	85	90	95	95

Outcome Target
Number of impacted acres using soil testing

Outcome Type: Medium

2007:	30017959	2008:	30100000	2009:	30200000	2010:	30300000	2011:	30400000

Outcome Target
Number of impacted acres using plant testing

Outcome Type: Medium

2007:	145621	2008:	146000	2009:	147000	2010:	147000	2011:	148000

Outcome Target
Number of impacted acres using water testing

Outcome Type: Medium

2007:	26635	2008:	26700	2009:	26800	2010:	26900	2011:	27000

Outcome Target
Forage testing submissions

Outcome Type: Medium

2007:	75	2008:	75	2009:	75	2010:	75	2011:	75

Outcome Target
Number of producers using strip-grazing for their stockpiled forages

Outcome Type: Medium

2007:	22	2008:	22	2009:	22	2010:	22	2011:	22

Outcome Target
Number of clientele (non-duplicated) who use the DD50 program for improved production efficiency

Outcome Type: Medium

2007:	1794	2008:	1780	2009:	1800	2010:	1800	2011:	1850

Outcome Target
Number of impacted acres using DD50 program for improved production efficiency

Outcome Type: Medium

2007:	712053	2008:	712500	2009:	713000	2010:	713500	2011:	714000

Outcome Target
Number of clientele using the RICESEED program

Outcome Type: Medium

2007:	247	2008:	250	2009:	255	2010:	255	2011:	260

Outcome Target
Number of acres planted based on output from RICESEED program

Outcome Type: Medium

2007:	55765	2008:	56000	2009:	56500	2010:	56600	2011:	57000

Outcome Target
Number of Master Gardeners who recertified

Outcome Type: Medium

2007:	500	2008:	500	2009:	500	2010:	500	2011:	500

Outcome Target
Business Start Ups

Outcome Type: Long

2007:	1	2008:	0	2009:	0	2010:	0	2011:	1

Outcome Target
Number of new horticultural businesses and new farmers markets

Outcome Type: Long

2007:	2	2008:	2	2009:	2	2010:	2	2011:	2

Outcome Target
Acres of harvested wheat (all)

Outcome Type: Long

2007:	570000	2008:	570000	2009:	570000	2010:	570000	2011:	570000

Outcome Target
Yield (bushels) of harvested wheat (all)

Outcome Type: Long

2007:	50	2008:	50	2009:	50	2010:	50	2011:	50

Outcome Target
Price (bushel) of harvested wheat (all)

Outcome Type: Long

2007:	3	2008:	3	2009:	3	2010:	3	2011:	3

Outcome Target
Value of Production of harvested wheat (all)

Outcome Type: Long

2007:	87780000	2008:	87780000	2009:	87780000	2010:	87780000	2011:	87780000

Outcome Target
Acres of harvested soybeans (all)

Outcome Type: Long

2007:	2890000	2008:	2890000	2009:	2890000	2010:	2890000	2011:	2890000

Outcome Target
Yield (bushels) of harvested soybeans

Outcome Type: Long

2007:	38	2008:	38	2009:	38	2010:	38	2011:	38

Outcome Target
Price (per bushel) of harvested soybeans

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
7	7	7	7	7

Outcome Target
Value of Production of harvested soybeans (all)

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
791094000	791094000	791094000	791094000	791094000

Outcome Target
Acres of harvested rice (all)

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
1455000	1455000	1455000	1455000	1455000

Outcome Target
Yield (pounds) of harvested rice (all)

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
6610	6610	6610	6610	6610

Outcome Target
Price (dols/cwt) of harvested rice (all)

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
7	7	7	7	7

Outcome Target
Value of Production of harvested hay (all)

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
740648000	740648000	740648000	740648000	740648000

Outcome Target
Acres of harvested cotton (all)

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
945000	945000	945000	945000	945000

Outcome Target
Yield (pounds) of harvested cotton (all)

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
916	916	916	916	916

Outcome Target
Total production (bales) of harvested cotton (all)

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
1804000	1804000	1804000	1804000	1804000

Outcome Target
Acres of harvested hay (all)

Outcome Type: Long

2007:	1340000	2008:	1340000	2009:	1340000	2010:	1340000	2011:	1340000

Outcome Target
Yield (tons) of harvested hay (all)

Outcome Type: Long

2007:	2	2008:	2	2009:	2	2010:	2	2011:	2

Outcome Target
Price (per ton) of harvested hay (all)

Outcome Type: Long

2007:	55	2008:	55	2009:	55	2010:	55	2011:	55

Outcome Target
Value of Production of harvested hay (all)

Outcome Type: Long

2007:	148631000	2008:	148631000	2009:	148631000	2010:	148631000	2011:	148631000

20. External factors which may affect outcomes

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

Description
{NO DATA ENTERED}

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Other (AR data from NASS)

Description
Comprehensive program and departmental reviews for research, extension and teaching programs are conducted on a five to seven year cycle.

22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Tests
- Journals
- Other (Sec. data-AR: NASS)

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Technology & Engineering

2. Program knowledge areas

- 404 5% Instrumentation and Control Systems
- 402 10% Engineering Systems and Equipment
- 102 10% Soil, Plant, Water, Nutrient Relationships
- 111 10% Conservation and Efficient Use of Water
- 605 5% Natural Resource and Environmental Economics
- 132 1% Weather and Climate
- 806 40% Youth Development
- 405 10% Drainage and Irrigation Systems and Facilities
- 601 5% Economics of Agricultural Production and Farm Management
- 112 4% Watershed Protection and Management

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

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

5. Brief summary about Planned Program

Since there are approximately 4.5 million irrigated acres in Arkansas the Division of Agriculture has a very active educational program in the area of agricultural water management. The program specifically addresses the implementation of water management methods and systems that conserve water resources and reduce energy and labor requirements. On-farm demonstrations are a key aspect to promote adoption and to provide farm scale information for use in educational presentations and publications. Division of Agriculture extension IT and Plant Pathology faculty have partnered to design and develop commodity crop software decision tools which provide key decision point information for the support of production efficiency and environmental stewardship.

With new and growing challenges, effective youth development is more important than ever. The Division of Agriculture's 4-H youth development program can have a significant statewide impact through technology education programs.

6. Situation and priorities

Arkansas producers irrigate approximately 4.5 million acres of row crops. This is approximately 75% of the total row crop acres produced in the state. Rice accounts for about one third of the irrigated acres and represents almost 50% of the rice production in North America. Row crop producers in Arkansas are very dependent on irrigation in order to produce the yields and quality of crops necessary to have the potential to make a profit and remain solvent. Producers in some row crop areas are facing a decline in irrigation water resources and all producers are struggling with significant increases in irrigation pumping costs. The shortage in dependable and affordable labor is also an increasing challenge for producers trying to better manage their irrigation water. Producers need information on irrigation methods and systems that provide improved water management by conserving water and reducing pumping and labor costs. Experience from on-farm irrigation demonstrations indicates that there are methods and systems that can help producers improve water management on their farms and reduce pumping and labor costs.

Extension faculty partner to develop commodity crop software decision tools which are delivered to clientele in coordination with county Extension offices; these run on home/office computers or through interactive web pages. These tools incorporate research based information developed by UA Experiment Station faculty, and provide key decision point information for the support of production efficiency and environmental stewardship.

The Access the Future Coalition was formed at the 2000 National 4-H Conference by the Access the Future Consulting Group to coordinate the efforts of 4-H youth and adults working in partnership with organizations across the United States to slam shut the Digital Divide that separates our country's technology haves and have-nots. By Digital Divide, we mean the disparities in both accessing and using information technology. Youth from throughout the nation gathered at Conference to identify issues of concern to youth and responses to those issues.

The Access the Future Coalition is the 4-H youth response, our action to help American society address these issues. National leadership for 4-H and information technology comes from the Cooperative State Research, Education, and Extension Service (CSREES), which is part of the United States Department of Agriculture (USDA). Both USDA and CSREES have declared that addressing the issues of the Digital Divide are priorities for the coming year.

7. Assumptions made for the Program

Producers will adopt practices that improve water management once they realize how the practices are implemented on the farm and see the benefits that are derived. Producers are more likely to adopt practices that have been demonstrated to be effective on farms and under

conditions that they feel are similar to their situation. Similarly, they relate better to the comments and experiences that other farmers share related to practices that they tried on their farm. This program involves working on-farm with producers to assist them with the implementation of methods, practices and systems that can help them improve their water management. Previous experiences from on-farm efforts show a much higher acceptance and adoption rate by the cooperating producer as well as the producers in the area. This is due to the opportunity that other producers have to gain more first hand knowledge of what is being done on a nearby farm similar to theirs. It is also the result of the information from the on-farm work being shared in educational meetings in a way that growers can see how it can apply to their farming operation. The on-farm approach also allows the investigators the opportunity to gain more experience making adjustments that may be necessary due to the many variables involved with doing on-farm irrigation demonstrations.

Producers across the state of Arkansas use the research-based decision tools to manage the selection of variety, determine seeding rates, manage critical event dates, analyze irrigation needs and organize soil, water, manure and forage testing results. Producers using the Farm Management decision tool accumulate the necessary data required by the Environmental Protection Agency and the Arkansas Department of Environmental Quality (ADEQ). The report output from the program has been endorsed as an accepted format for submission to ADEQ.

Members of the Arkansas 4-H Technology Team meet to discuss future plans for the team including community service projects and educational workshops. The team can learn about GPS, digital photography or even forensic science with hands-on lessons at the workshop. The lessons are given by various career professionals in the technology field. The goals of the state tech team are to introduce 4-H members to various careers in technology, to learn new skills in technology, to network with other 4-H members who are interested in technology and to complete a community service project that is technology related.

8. Ultimate goal(s) of this Program

Increase the number of producers who adopt practices that improve water management so water is conserved and pumping and labor costs are reduced.

The goal of the producer decision support programs/computer tools is a better-informed clientele base, resulting in a more efficient handling of resources and time, in support of Arkansas Agribusiness.

The goals of 4-H technology educational programs include providing Arkansas youth with opportunities to become skilled in the safe and effective use of information technology and its applications and the ability to apply their technical skill and knowledge as a tool to enhance their education, career opportunities, contributions to community and personal life.

9. Scope of Program

- In-State Extension
- Multistate Extension

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : Yes

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	5.0	0.0	0.0	0.0
2008	5.0	0.0	0.0	0.0
2009	5.0	0.0	0.0	0.0
2010	5.0	0.0	0.0	0.0
2011	5.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Field tours, educational meeting, publications, web site development to provide information on practices that improve water management
On-farm demonstrations of practices for improved water management

CES decision tools delivered.
Number of non-duplicated 4-H Youth technology and engineering programs delivered
Number of non-duplicated 4-H Youth participants in technology and engineering programs

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

Extension	
Direct Methods	**Indirect Methods**
• Education Class • One-on-One Intervention • Demonstrations • Other 1 (Field Days)	• Web sites • Other 1 (Publications)

15. Description of targeted audience

Row crop producers
4-H Youth

16. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	3000	1000	500	700
2008	3000	1100	550	700
2009	3000	1200	600	700
2010	3000	1200	600	700
2011	3000	1200	600	700

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

18. Output measures

Output Target

Number of CES On-Farm Demonstrations of practices for improved water management

2007: 50 2008: 50 2009: 40 2010: 40 2011: 40

Output Target

Number of CES Field Tours facilitated

2007: 15 2008: 15 2009: 15 2010: 15 2011: 15

Output Target

Number of CES sponsored educational meetings addressing water management with producers

2007: 100 2008: 100 2009: 100 2010: 100 2011: 100

Output Target

Number of producers and consultants attending CES sponsored educational meetings addressing water management

2007: 3000	2008: 3000	2009: 3000	2010: 3000	2011: 3000

Output Target

Number of publications that include Water Management Information

2007: 10	2008: 10	2009: 10	2010: 10	2011: 10

Output Target

Number of postings of Water Management Information to web sites

2007: 10	2008: 10	2009: 10	2010: 10	2011: 10

Output Target

Number of CES decision tools delivered

2007: 100	2008: 100	2009: 100	2010: 100	2011: 100

Output Target

Number of states requesting copies of Arkansas CES decision support tools

2007: 3	2008: 3	2009: 3	2010: 3	2011: 3

Output Target

Number of foreign entities requesting Arkansas CES decision tools

2007: 1	2008: 1	2009: 1	2010: 1	2011: 1

Output Target

Number of county 4-H Tech Teams

2007: 12	2008: 15	2009: 15	2010: 15	2011: 18

Output Target

Number of state 4-H Tech Team workshops

2007: 6	2008: 6	2009: 6	2010: 6	2011: 6

Output Target

Number of participants at the Arkansas 4-H Technology Conference

2007: 40	2008: 40	2009: 40	2010: 50	2011: 50

Output Target

Number of participants enrolled in the 4-H GPS & NatureMapping Program

2007: 100	2008: 110	2009: 120	2010: 150	2011: 150

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target
Number of people who increase their knowledge related to production practices for improved water management, following attendance at CES educational programs

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
150	150	150	150	150

Outcome Target
Number of people who intend to adopt one or more practices for improved water management (CES)

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
150	150	150	150	150

Outcome Target
Number of county 4-H Tech Team members who increased their knowledge related to use of technology

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
100	100	100	100	100

Outcome Target
Number of county 4-H Tech Team members, 4-H GPS and NatureMapping program participants who increased their knowledge of careers that use GPS

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
120	120	120	120	120

Outcome Target
Percent of participants enrolled in the 4-H GPS & NatureMapping Program that used GPS for the first time during the program

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
50	50	50	50	50

Outcome Target
Percent of participants enrolled in the 4-H GPS & NatureMapping Program that reported learning enough about GPS during the program to use it on their own

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
50	50	50	50	50

Outcome Target
Percent of participants enrolled in the 4-H GPS & NatureMapping Program that plan to use GPS again in the future

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
80	80	80	80	80

Outcome Target
Number of 4-H Youth participants who learned wise use of resources life skill

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
225	250	275	300	325

Outcome Target
Number of 4-H Youth participants who learned decision making life skill

Outcome Type: Short

2007:	100	2008:	100	2009:	100	2010:	100	2011:	100

Outcome Target
Number of clientele who adopt one or more practices for improved water management (CES)

Outcome Type: Medium

2007:	150	2008:	150	2009:	150	2010:	150	2011:	150

Outcome Target
Number of county 4-H Tech Team members who completed a community service project using technology

Outcome Type: Medium

2007:	30	2008:	30	2009:	30	2010:	30	2011:	30

Outcome Target
Number of 4-H Journals completed in technology and engineering

Outcome Type: Medium

2007:	30	2008:	30	2009:	30	2010:	30	2011:	30

Outcome Target
Number of 4-H Youth projects completed in technology and engineering

Outcome Type: Medium

2007:	30	2008:	30	2009:	30	2010:	30	2011:	30

Outcome Target
Number of non-duplicated 4-H Youth participating in technology and engineering events

Outcome Type: Medium

2007:	100	2008:	100	2009:	100	2010:	100	2011:	100

Outcome Target
Number of clientele (non-duplicated) who use the DD50 program for improved production efficiency

Outcome Type: Medium

2007:	1794	2008:	1780	2009:	1800	2010:	1800	2011:	1850

Outcome Target
Number of impacted acres using DD50 program for improved production efficiency

Outcome Type: Medium

2007:	712053	2008:	712500	2009:	713000	2010:	713500	2011:	714000

Outcome Target
Number of clientele using the RICESEED program

Outcome Type: Medium

2007:	247	2008:	250	2009:	255	2010:	255	2011:	260

Outcome Target
Number of acres planted based on output from RICESEED program

Outcome Type: Medium

2007:	55765	2008:	56000	2009:	56500	2010:	56600	2011:	57000

Outcome Target
Total number of acres with practices resulting in improved water conservation and management (CES)

Outcome Type: Long

2007:	100000	2008:	100000	2009:	100000	2010:	100000	2011:	100000

Outcome Target
Average water savings in percent for MIRI fields on silt loam soil

Outcome Type: Long

2007:	23	2008:	23	2009:	23	2010:	23	2011:	23

Outcome Target
Number of 4-H Youth awarded post secondary scholarships related to technology and engineering

Outcome Type: Long

2007:	12	2008:	12	2009:	12	2010:	12	2011:	12

Outcome Target
Percent of participants enrolled in the 4-H GPS & NatureMapping Program that would consider a career in a technology field and/or using GPS technology

Outcome Type: Long

2007:	80	2008:	80	2009:	85	2010:	90	2011:	100

20. External factors which may affect outcomes

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

Description

« Weather extremes can greatly impact water management efforts
« A decrease in the agricultural economy can reduce ability to adopt certain practices
« Appropriation of funding changes can impact support to on-farm demonstrations, technology support and 4-H youth programs
« Government regulations can have significant impact on water management
« Competition for water resources can impact water management on farms
« Assignments to other programs can impact the staff support for these programs
« Computer management tools for row-crop producers are critical for risk management and agricultural sustainability

21. Evaluation studies planned

- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

Description

Yearly evaluations of CES program measures will be done through routine reporting by staff of programming efforts and accomplishments.

CES faculty and staff will be encouraged to report case studies and/or success stories associated with the goals of this program.

22. Data Collection Methods

- Sampling
- Whole population
- On-Site
- Unstructured
- Case Study
- Observation
- Journals

Description

On-site surveys will be conducted at CES field tours and educational meetings
Case studies will be conducted from the CES on-farm demonstrations CES faculty and staff will report their observations of changes related to the programs goal.