2007 University of Arkansas at Pine Bluff Combined Research and Extension Plan of Work

Brief Summary about Plan of Work

The School of Agriculture, Fisheries and Human Sciences at the University of Arkansas at Pine Bluff (UAPB) is composed of three academic departments, the 1890 research and Extension programs, and the Aquaculture/Fisheries Center of Excellence. Research faculty are integrated into the academic units in agriculture and human sciences, while Extension personnel are under the direct supervision of associate Extension administrators. The Department of Aquaculture/Fisheries and the Aquaculture/Fisheries Center of Excellence are administered by a department head who is also the center director. Under this structure, academic faculty are integrated into the functions of the center of excellence through joint appointments that include academic, research and/or extension responsibilities.

The primary audience for research and extension programs at the University of Arkansas at Pine Bluff is limited resource farmers and families as well as the Aquaculture industry and individuals and agencies with an interest in natural fisheries and fish habitats. Eastern Arkansas is the geographic beneficiary of these programs. UAPB began its formal research program in 1967 with an initial appropriation of $16,980 and the research has continued to expand with additional federal funding and the recent state funding match. Currently both state and federal funding is expanded with grant funds and special funding through other federal agencies.

Program areas include family and youth development, livestock management, small farms, horticulture, and aquaculture/fisheries. The Aquaculture/Fisheries Center of Excellence is the only one at an 1890 institution and the research and extension components of the program work closely with the aquaculture and fisheries leadership in the state.

The University of Arkansas at Pine Bluff is committed to strong programs in research and extension and is currently participating in a self-study and CSREES merit review process. The site visit took place in May of this year.

2007-2011 Plan of Work Programs

Twenty nine programs are submitted for your review from the University of Arkansas at Pine Bluff School of Agriculture, Fisheries and Human Sciences. Twelve of the programs are submitted from the Aquaculture/Fisheries Center of Excellence. There were eight research programs, eight extension programs and 13 integrated programs.

Plan of work programs from the Department of Human Sciences consist of programs in human nutrition and families, youth and communities. The program in Human Nutrition will focus on increasing the consumption of low-fat dairy products among school children 9-12 years old in the Pine Bluff middle schools. The other program will focus on improving the quality of child care in Southeastern Arkansas.

Research programs in agriculture while diverse in disciplines are all aimed at increasing profitability of small farm enterprises in order to help rural farm families maintain economic vitality and be able to remain on the farm. The Horticulture program will examine new fruit and vegetable crops especially suited for small farm operations and production practices that will enhance yield. Food Animal Production and Management will work with low cost feed alternatives for goats and swine commonly raised by small scale farmers. The Alternative Crop Production research is designated to developed and/or improve production practices that increase, diversity, sustainability and profits on small farms in the lower Mississippi Delta Region. The Value Added Products project will work with processing of vegetables and fruits and look for new marketing avenues for these products in order to further enhance the income of the small farm operator. The Breeding and Biotechnology program is working to develop improved cowpea cultivars that resist biotic and abiotic stresses. Through biotechnology, transgenic cowpeas containing insect resistant genes will be developed for the benefit of small-farm, limited resource farmers in Arkansas and elsewhere.

A new program in Agricultural Policy will try and determine the underlying issues that prevent small, limited-resource farmers from participation in agricultural programs. Identification of factors that prevent participation will result in recommended changes in agricultural policy that benefit small, limited-resource farmers. Increased awareness/understanding of agricultural programs and their impacts on small limited resource farmers will increase farmer benefits.

The Small Farm Program is a combination of two Small Farm Outreach Training and Technical Assistance Programs (2501), a Risk Management Program, and the Cooperative Extension Program with emphasis on Agronomy. The program is operated in

18 counties in Eastern Arkansas or the row crop area and in 11 counties in Southwest Arkansas or the livestock area.

Extension programs will address youth in a Beginning Scholars program designed to increase math and science proficiency in students after school and a program that will enhance teen decision making. A new program is being introduced in the area of Family Resource Management. The goal is to increase financial literacy among low income African Americans youth and their parents. The agriculture extension programs will emphasize livestock management and cropping systems. The majority of the research scientists in Agriculture have a 5% extension assignment to facilitate the dissemination of information.

Catfish is the leading segment of U.S. aquaculture, contributing over 46% of the value of aquaculture production in the United States. Arkansas is the second leading catfish-producing state in the U.S. The U.S. catfish industry has struggled through several years of low prices and severe cash flow problems. Priority areas include development of improved management recommendations for stocking, grading, and harvesting catfish. Rigorous comparison of performance of hybrids with channel catfish, and pond evaluation of feeding strategies are priorities. Off flavor has plagued the catfish industry for the past 30 years. At any time in the summer months over 80% of ponds are considered off flavor and unable to be marketed. To compound the problem, only two products are legally approved for use to control off flavor. The catfish production work addresses these challenges for producers.

Arkansas leads the nation in baitfish production, one of the top five segments of U.S. aquaculture. Programs are designed to improve profitability through improving management and production efficiencies for the baitfish industry, improve disease control and developing hatchery management techniques.

Additional programs are planned in youth fishing, recreational fishing and working directly with aquaculture producers to validate the research in a commercial setting through research verification.

Estimated number of professional FTEs/SYs to be budgeted for this plan.

Year	Extenion		Research	
	1862	1890	1862	1890
2007	0.5	23.5	0.0	21.3
2008	0.5	23.5	0.0	21.3
2009	0.5	23.5	0.0	21.3
2010	0.5	23.5	0.0	21.3
2011	0.5	23.5	0.0	21.3

Merit Review Process

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

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

Brief explanation

Our research and Extension programs are monitored annually through a performance appraisal system that assures adherence to goals planned. Each department in the School of Agriculture, Fisheries and Human Sciences has an internal peer review system that evaluates

research proposals prior to their implementation.

Merit review is central to the institutional goal of implementing quality programs. A request for a CSREES review was made in 2004. That review did not materialize and a second request for a CSREES review was made in 2005. This review was granted and site visit conducted April 30, through May 4, 2006. The review included all Extension and research programs in the school. We are awaiting the final report.

The Aquaculture/Fisheries Center conducted an external review in 1999 to comply with the Merit Review Process mandated in the 2000-2004 POW. In November 1999, Drs. Robert P. Romaire, Louisiana State University, Bill Simco, University of Memphis, Jimmy Avery, Mississippi State University, and Robert Durborow, Kentucky State University were invited to review the research and extension activities as a component to the Merit and Peer Review process of the Plan of Work of the Cooperative State Research, Education, and Extension Service (CSREES). Drs. Romaire and Simco were responsible for reviewing the research and teaching programs and activities in the Aquaculture/Fisheries Center.

In 2003, to provide for more continuous merit review by university colleagues, Drs. Romaire and William Shelton were added to the National Fisheries Advisory Council. Along with Dr. Simco, a long-time member, there are now three university scientists who meet annually to review and recommend new directions for the UAPB Aquaculture/Fisheries Center.

Moreover, the Strategic Plan for the AFC Center is in the process of being updated for the next 5-year period, 2007-2011. The new draft of the 2007-2011 Strategic Plan will be reviewed by the UAPB National Fisheries Advisory Council that includes peer researchers and extension specialists.

The 1890 Family and Youth development program conducted an external review in FY 2000. The review team was comprised of a CSREES National Program Leader, University faculty, local physician and additional stakeholders. The review was positive and provided important feedback for the program.

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 at Pine Bluff administration and faculty are actively involved in professional meeting nationally and internationally that identify critical issues facing the state and nation. There is continuous contact between all the partners in addition to the formal advisory meetings to identify the critical issues. Membership of advisory committees often partner for the implementation of those programs.

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

Because of the 1890 mission to serve the under-served and under-represented populations these clientele are a priority for most of our programs. Advisory committees, task forces and other planning groups include clientele representing the under-served and under-represented population to ensure programs are planned for effective delivery and targeted in the areas of most critical need.

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

We produce a report document bi-annually for distribution to all stakeholders. The University of Arkansas at Pine Bluff submits program impacts to the CSREES National Database and produces multiple publications on the research and programmatic outcomes. Outcomes and impacts are always communicated in a manner that clarifies the value of programs to current and future stakeholders.

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

The University of Arkansas at Pine Bluff utilizes the unique continuum for identifying research needs based on local problems, providing the research needed and then applying the solutions to those identified problems through an extension program. Today's issues are complex and require a multi disciplinary and multi institutional approach. This allows each partner to build on their individual strengths and rely on the expertise and talent of other partners to work as a team for overall effectiveness in

programming. Evaluation is planned as a part of the overall program and is used to document progress toward outcomes.

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 traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder individuals

Brief explanation.

Advisory Committees are essential to the stakeholder input process developed by SAFHS and approved by CSREES. Stakeholder input is a core component of all 1890 research and Extension programs. Means for acquiring input varies depending upon the nature of the research or Extension program and the diversity of relevant stakeholders. These may include local and state agencies, community groups, producers and other targeted audiences, as well as business and industry groups. Producer meetings, advisory groups, conferences, and focus group discussions are major means for gaining input.

Our FY 2000-2004 POW described a stakeholder input process that, in light of structural differences in the departments and differences in audiences served, varied across departments and programs. This approach was taken because the clientele needs for research and Extension – in programs other than aquaculture are broad in scope, local in nature and geographically limited.

University of Arkansas at Pine Bluff Stakeholder Process:

· Some formal mechanism shall be established to garner stakeholder input into the planning and implementation of any new research or Extension program. Such formal mechanisms may in Area-wide focus group meeting in the geographic area of the targeted program. Structured survey of potential audience, commodity groups and other stakeholders.

· An annual process shall be established to garner stakeholder input into the continued implementation of all ongoing research and Extension programs. Acceptable means of annual stakeholder input include – Program task forces or coalitions that include program participants and community based partners.

· Advisory committees composed of all relevant stakeholders.

The Agriculture Research and Extension Advisory Council (AREAC)

The AREAC was organized in 2003 to add structure to the stakeholder input process for research and Extension programs in agriculture. The Council formally meets once a year, but members are in continuous contact with research and Extension faculty and administrators on a less formal basis. Membership includes 12 producers engaged in a variety of agricultural enterprises (i.e. alternative crops, row crops, livestock, etc.) four (4) current and retired Extension professionals (two from 1890 and two from 1862) one federal agency (NRCS) representative, one state agency (Arkansas Department of Environmental Quality) representative, and one industry (Monsanto) representative. The broad-based representation of Council membership provides a broadened perspective of challenges facing producers and promotes the creation of partnerships to address the challenges.

The Aquaculture-FisheriesCenterof Excellence Advisory Committee

The primary advisory committee that provides feedback and input into the UAPB Aquaculture Fisheries Program is the National Fisheries Advisory Council. This committee was initially formed in 1987 and it meets annually. It is primarily focused on aquaculture operations although it is inclusive of natural fisheries. The various committee members represent the Arkansas aquaculture industry (catfish, baitfish, ornamental fish, and sport fish hatcheries, both grow-out operations and processing plants), the industry service sector (feed mills, Extension and research), state and federal natural resource management authorities (U.S. Fish and Wildlife Service, Arkansas Game and Fish Commission) and the University of Arkansas at Pine Bluff. Some committee members also serve as representatives for other state and national aquaculture industry organizations, so that these individuals contribute a much broader perspective to advisory committee meetings than their formal capacity might otherwise suggest.

In addition to the National Fisheries Advisory Council, there are a number of advisory subcommittees that specialize in specific areas and meet regularly to contribute towards the Aquaculture/Fisheries Center's program planning and development. These include the UAPB Facilities Subcommittee, the Catfish Subcommittee, and the Lonoke Aquaculture Subcommittee.

Human Sciences Extension

The Young Scholars Advisory Committee Structure

A Young Scholars Task Force, including some of the children and parents enrolled in the program, oversees the planning, implementation and evaluation of the program in both counties. One of the children serves as chair of the task force while another child serves as secretary. In addition to program parents and children, membership includes representatives of partnering agencies, governmental, officials, and state legislators. The Task Force was created at the inception of the program

in 1996 and continues to be an integral component of the management and operation of the program.

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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
- Open Listening Sessions
- Use Surveys

Brief explanation.

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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

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals

Brief explanation

In addition to the National Fisheries Advisory Council, that meets annually, there are a number of advisory subcommittees that specialize in specific areas and meet regularly to contribute towards the Aquaculture/Fisheries Center's program planning and development. The Catfish Subcommittee meets twice a year in Lake Village, Arkansas to plan the mid-year and annual educational meetings that are hosted by UAPB for the Catfish Farmers of Arkansas. The Lonoke Aquaculture Subcommittee meets once a year to plan the annual UAPB Lonoke Aquaculture Workshop, which is primarily focused on bait and ornamental fish aquaculture. Members of the Facilities Subcommittee meet on a regular basis to plan UAPB Aquaculture/Fisheries Center facility expansion and develop resources.
The Agriculture Research and Extension Advisory Council (AREAC) formally meets once a year, but members are in continuous contact with

research and Extension faculty and administrators on a less formal basis.
Other groups meet as needed with new program development.

The Council formally meets once a year, but members are in continuous contact with research and Extension faculty and administrators on a less formal basis.

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- In the Action Plans
- To Set Priorities

Brief explanation.

Input from stakeholders will be presented and discussed at formal meetings with research faculty and staff. Strategies will be developed to address identified concerns.

1. Name of the Planned Program

1890 Family and Child Development Program

2. Program knowledge areas

- 806 60% Youth Development
- 802 40% Human Development and Family Well-Being

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

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

5. Brief summary about Planned Program

Two programs will be implemented in the 1890 Family and Child Development Program: Teens on the Go and the Young Scholars. Teens on the Go is a newsletter series for students in grades 7-12. Six issues of the newsletter is offered each year. The program is a partnership between the 1890 Family and Child Development Program and the 1862 Cooperative Extension Service. The newsletter celebrated its 25th anniversary in 2004. The Young Scholars program is an after school program conducted in housing projects for low-income minority children, age 6-15 and their parents. The purpose of the program is to reverse the poor academic trends of minority children and help them succeed in school.

6. Situation and priorities

Public officials and citizens in general in Arkansas continue to be concerned about the well-being of the state's children and their families. Forty-seven percent of the state's minority children live in single parent homes. They are more likely to be poor and are being raised without the support of a father. Family and child development programs address these issues and offer solutions to make life better for all family members.

7. Assumptions made for the Program

In the 1890 Family and Child Development Program, parents enrolled in the Young Scholars Program are expected to develop skills to help their children achieve their full potential and become contributing members of society. Teenagers receiving Teens on the Go are expected to develop decision making skills for dealing with critical issues they face. Children enrolled in the Young Scholars are expected to increase school performance and avoid becoming school dropouts.

8. Ultimate goal(s) of this Program

1. To help teenagers make better decisions regarding critical issues they face. 2. To develop the capacity of low-income minority parents create an environment that will enhance the development of their children. 3. To help low-income minority children increase performance and avoid dropping out of school.

9. Scope of Program

- In-State Extension

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	1.6	0.0	0.0
2008	0.0	1.6	0.0	0.0
2009	0.0	1.6	0.0	0.0
2010	0.0	1.6	0.0	0.0
2011	0.0	1.6	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Two focused areas will be addressed in the 1890 Family and Child Development Program. These include Teens on the Go and the Young Scholars Program. The Teens on the Go is a newsletter series that will be developed for students in grades 7-12. the Young Scholars Program will be implemented in housing projects in two Delta counties. The children will meet 5-days a week in an after school program that emphasizes math and science skills through human sciences and agriculture subject matter. Parents with children enrolled in the Young Scholars Program will meet weekly and focus on parenting education, stress management, coping, and job-related skills, family relationships, and eocnomic- and self-sufficiency skills.

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	• Newsletters

15. Description of targeted audience

The target audience in the 1890 Family and Child Development focused programs will include: Teenagers in grades 7-12 for the newsletter, Teens on the Go. Parents and their children who live in two housing projects in Monroe and Lee Counties for the Young Scholars Program.

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	78	0	84	10000
2008	78	0	84	10000
2009	78	0	84	10000
2010	78	0	84	10000
2011	78	0	84	10000

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

We will provide math and science workshops for children in the Young Scholars Program. Parents will receive training in parenting, stress management, money mangement, child development, and job-related and coping skills.

2007: 162 2008: 162 2009: 162 2010: 162 2011: 162

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Forty percent of children in the Young Scholars Program will have an increase in school performance and forty percent of families will report being able to meet the financial obligations of their families.

Outcome Type: Short

2007: 62 2008: 62 2009: 62 2010: 62 2011: 62

20. External factors which may affect outcomes

- Economy
- Appropriations changes
- Populations changes (immigration,new cultural groupings,etc.)

Description

The changing economy with loss of jobs could definitely affect outcomes for parents enrolled in the program. A decrease in appropriations would alter the numbers of persons served. With the influx of immigrants coming into the state, the population in the housing projects could affect who will be served.

21. Evaluation studies planned

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

Description

Evaluation methods will include pre-and post test, observations, self-reporting, and case studies.

22. Data Collection Methods

- Sampling
- Mail
- On-Site
- Structured
- Case Study
- Observation

Description

Data collection methods will include targeted samping, mail surveys, incomplete sentences, case studies and observations.

1. Name of the Planned Program

1890 Family Resource Management

2. Program knowledge areas

- 801 40% Individual and Family Resource Management
- 806 60% Youth Development

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

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

5. Brief summary about Planned Program

The state of personal finances of U.S. households is often described as dismal and the solutions to changing behavior as daunting. However, experts generally agree that everyone can become a stronger money manager regardless of their level of income or financial situation. The primary goal of the 1890 family resource management program is to enhance the ability of limited resource individuals and families to make informed consumer decisions and to plan and manage their finances throughout their changing lifecycle. Targeted Arkansas Delta audiences are youth and young adults, limited resource farmers and families and faith based and community based organization members and participants.
The specific program activities include providing training utilizing best practices in the field, developing tailored print media and publications for low skill audiences, building on and creating partnerships with other agencies and organizations to expand outreach, implementing a research agenda to strengthen knowledge base, involving target audiences in program development to strengthen impact, marketing program and conducting resource development activities for program sustainability. This is a new program that requires a long-term commitment on the part of the university and the target audiences. The publication series Money Cents-ability has been launched and includes timely information on consumer issues and personal financial management topics.

6. Situation and priorities

The frequent practice of sound money management skills is a critical aspect of family well-being, particularly in a rapidly changing economy. This is especially true for limited-resource individuals and families who are the focus audiences of this program. Research indicates that low income African American youth and their parents tend to score low on financial literacy tests. To eliminate this situation in the short-term is impossible, but overtime an increase in targeted culturally competent programming, improving financial literacy can be accomplished and is the goal of this program.

7. Assumptions made for the Program

Youth and young adults enrolled in this program are expected to gain knowledge and skills in planning a budget, practicing money management skills, saving and investing. Families, individuals and limited-resource farmers are expected to reduce debt and begin to build wealth through saving and investing. Faith-based and community organizations are expected to implement financial education programs for their clientele.

8. Ultimate goal(s) of this Program

The primary goal of this program is to help the target audiences improve their ability to make informed consumer decisions and to use basic money management practices (budgeting, saving and investing) that will enhance their ability to manage their finances and build wealth throughout their lifecycle.

9. Scope of Program

- In-State 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	0.0	0.6	0.0	0.0
2008	0.0	0.6	0.0	0.0
2009	0.0	0.6	0.0	0.0
2010	0.0	0.6	0.0	0.0
2011	0.0	0.6	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

The 1890 Family and Resource Management Program will be conducted through a number of organized groups and will include educational programs (workshops) seminars, tailored publications that provide information on money management that are written for low-literacy individuals, public service announcements, articles in Extension newsletters and TV programs.

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

Extension	
Direct Methods	Indirect Methods
• Education Class • Workshop • Group Discussion	• Public Service Announcement • Newsletters • TV Media Programs

15. Description of targeted audience

The 1890 Family and Resource Management Program targets youth, ages 6-18, young adults, parents, limited-resource farmers and faith-based and community organizations.

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	300	500	200	500
2008	300	500	200	500
2009	300	500	200	500
2010	300	500	200	500
2011	300	500	200	500

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Many delivery modes will be used to reach the target audiences including workshops, trainings, and events, media, community based and faith-based organization partners, and participating in local, regional and national initiatives related to promoting family financial well being. The activities will be documented including but not limited to, participant attendance and evaluations, products developed, resources and partners obtained and direct and indirect contacts made.

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Forty percent of the 1500 program participants will gain knowledge in managing their money.

Outcome Type: Short

2007: 600	2008: 600	2009: 600	2010: 600	2011: 600

20. External factors which may affect outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Competing Programatic Challenges

Description

A national disaster or changes in appropriations could gravely affect the program outcomes for the target audiences. An adverse change in the economy will make it more difficult for the clientele to achieve their financial goals. Competing programmatic challenges may occur with faith-based and community organizations causing a redirection in programming efforts.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during 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

Pre-and –post tests, self-reporting, case studies and comparison of program participants are some of the evaluation strategies that will be used in this program.

22. Data Collection Methods

- Sampling
- On-Site
- Structured
- Case Study

Description

Data collection methods will include sampling of the participants, structured interviews and case studies. These methods are known through research to be effective in collecting data from the target audiences of this program.

1. Name of the Planned Program

Agricultural Policy

2. Program knowledge areas

- 610 100% Domestic Policy Analysis

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

4. Program duration : Medium Term (One to five years)

5. Brief summary about Planned Program

Minority and limited-resource farmers are experiencing economic problems. Some of these problems include: 1) decreasing farm profits, 2) difficulty acquiring capital, 3) increased costs of inputs and significant interest charges and 4) an increase in the rate at which farmers are going out business. Limited-resource farmers may be defined as “those farmers having gross sales less than $100,000; total assets less than $150,000 and operator household incomes less than $20,000” (Steel and Mishra, 1996). Agricultural policies have been adopted by government regarding farm income for limited-resource farmers. Government payments are made to the farm sector. These payments include payments for commodity programs (i.e. direct payments, counter cyclical payments and marketing loan gains, and payments for conservation programs – Conservation Reserve Program (CRP)). Payments are based upon acreage and yield: (Payment * Payment Acreage * Payment Rate). In the past, limited-resource farmers have not had adequate proof of their yields. This may be attributed to poor recordkeeping. When there is no historical record county averages are used. In some cases, the limited-resource farmers’ yields may be much higher than the county average. Some studies have also suggested that limited-resource farmers must control their variable and fixed costs and lower their debt-to-asset ratio in order to become more profitable. It may be more profitable to lease land and equipment. In addition to, or as a result of these challenges, limited-resource farmers receive fewer government payments than other farmers. This research program will focus on determining the factors that affect small, limited-resource farmers participation in agricultural programs. Surveys of farmers, and economic modeling and analysis will be conducted. The findings of this research will be used to suggest more viable policy options for limited resource farmers, thus enhancing the socioeconomic status of limited-resource farmers.

6. Situation and priorities

Small, limited-resource farmers benefit from agricultural programs at a lower rate than other farmers.

7. Assumptions made for the Program

Underlying issues that prevent small, limited-resource farmers'participation in agricultural programs will be determined. Identificaiton of factors that prevent participation will result in recommended changes in agricultural policy that benefit small, limited-resource farmers. Increased awareness/understanding of agricultural programs will increase farmer benefits.

8. Ultimate goal(s) of this Program

Recommended changes in agricultural policy that benefit small, limited-resource farmers.

9. Scope of Program

- In-State Extension

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.1	0.0	1.4
2008	0.0	0.1	0.0	1.4
2009	0.0	0.1	0.0	1.4
2010	0.0	0.1	0.0	1.4
2011	0.0	0.1	0.0	1.4

Outputs for the Program

13. Activity (What will be done?)

Survey of 300 farmers that participate in the University of AR-Pine Bluff, Small Farm Project. Economic modeling and analysis of data collected will be done. Information will be disseminated to farmers via workshops, publications, pamphlets, newsletters and a farmer meeting.

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

Extension	
Direct Methods	Indirect Methods
• Workshop • Group Discussion • One-on-One Intervention	• Newsletters

15. Description of targeted audience

Three-hundred (300)farmers that participate in the University of AR-Pine Bluff, Small Farm Project.

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	60	0	0	0
2008	60	0	0	0
2009	60	0	0	0
2010	60	0	0	0
2011	60	0	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

1. Number of published journal articles. 2. Number of presentations at professional conferences. 3. Number of presentations at stakeholder and interest group forums. 4. Number of presentations at other forums.

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

1. Number of changes in policy or policy applications recommended. 2. Increased participationo f minority and limited resource farmers in agricultural programs. 3. Changes in production and consumption behavior of minority and limited resource farmers in response to greater awareness of agricultural policy. 4. Increased access to credit and other programs by minority and limited resource farmers. 5. Increased level of policy-makers interest/attention to research findings. 6. Changes in service provision to limited resource and minority farmers by state and federal agricultural agents.

Outcome Type: Medium

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

20. External factors which may affect outcomes

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

Description

Any changes that would reduce financial resources needed to contact farmers. This would also include changes that would discourage farmers from participating in surveys, workshops, and etc.
Essentially, a reduction in the financial budget needed to conduct the project would compromise the research.

21. Evaluation studies planned

- During (during program)

Description

Yearly mail and face-to-face evaluations/questionnaires to determine whether or not farmers' socioeconomic status and awareness/understanding of agricultual programs has increased.

22. Data Collection Methods

- Sampling
- Mail
- Telephone
- On-Site
- Structured
- Observation
- Journals

Description

Three-hundred (300) farmers that participate in the University of AR-Pine Bluff, Small Farm Project will be surveyed. Secondary data will be collected from journals and observation.

1. Name of the Planned Program

Alternative Crop Production

2. Program knowledge areas

- 205 40% Plant Management Systems
- 211 20% Insects, Mites, and Other Arthropods Affecting Plants
- 203 20% Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 601 20% Economics of Agricultural Production and Farm Management

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

4. Program duration : Medium Term (One to five years)

5. Brief summary about Planned Program

Alternative crop production research is designed to develope and/or improve production practices that increase, diversity, sustainability and profits on small farms in the lower Mississippi Delta Region. Evaluation of vegetable crop rotation, screening of alternative insecticides and ornamental plants for small farmers will be the major thrust. Alternative crops and production practices that small farmers can employ without major outlays in equipment and facility enhancement will be emphasized. The planned research addresses a critical issue for LRF's who are primarily row crop farmers but produce a few acres of vegetables. The LRF's are the stakeholders and need information on vegetable rotation/planting sequences to reduce potential build-up of insects, disease and weeds as a result of using the same land for vegetables each year. The LRF's enroll practically all of their crop acreage in the DCP program in order to receive maximum payments. Planting vegetable on DCP enrolled acreage is prohibited.

6. Situation and priorities

Small Farms, particular Limited Resource Farmers (LRF's), in the lower Mississippi River Delta need increased profits. Improving alternative crop production practices and increasing crop diversity on these farms have high priority. More efficient and sustainable production of vegetable and ornamental plants should increase profit on these farms. The LRF's need information on the most profitable vegetable crop rotations for farmers in their situation and effective integrated pest management systems. Adoption of innovated production practices and management schemes discovered in this program should reduce the number of LRF's going out of business. The target clientele who face the problem of growing vegetables on the same acreage each year are the LRF's (mostly black) in Eastern and Southeast Arkansas. The LRP's are reluctant to visit the FSA office to set aside additional acreage for vegetable production.

7. Assumptions made for the Program

Small farms in the lower Mississippi Delta will increase alternative crop production and use production practices to increase farm profits. Increased profits would come from use of more adaptable and sustainable production practices such as rotation/sequence planting of vegetables, and development of insect control methods to avoid disease and insect build up. The assumption is that by adapting practices developed in this research, LRF's will be able to avoid disease and insect problems by proper rotation of vegetable species and use of alternative insect control methods on their land area set aside for vegetables. LRF's in the UAPB clientele areas are not producing ornamental crops. This research will recommend plant species and production practices that will allow selected LRF's to be successful in ornamental horticulture production.

8. Ultimate goal(s) of this Program

Expected goals and outcomes are vegetable crop rotations and information that allow LRF's to continue to produce high yield good quality vegetables and good profit from their vegetable acreage, while continuing to enroll maximum row crop acreage in the DCP program.

9. Scope of Program

- In-State Extension
- In-State Research

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.1	0.0	4.2
2008	0.0	0.1	0.0	4.2
2009	0.0	0.1	0.0	4.2
2010	0.0	0.1	0.0	4.2
2011	0.0	0.1	0.0	4.2

Outputs for the Program

13. Activity (What will be done?)

Conduct research experiments; make presentations in conferences and meetings; conduct workshops and field days, etc.; develop Extension publications; and develop research publications.

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

Extension	
Direct Methods	Indirect Methods
• Workshop • Group Discussion • Demonstrations	• Newsletters

15. Description of targeted audience

Small Farms and Limited Resources Farmers.

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	50	75	20	50
2008	50	75	20	50
2009	50	100	20	75
2010	60	150	30	80
2011	75	150	50	100

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Fifty percent of the UAPB LRF's clientele adapt the rotation and insect control practices after five years. In case of ornamental 3-4% of UAPB LRF's will adopt ornamental production after five years.

2007: 25 2008: 50 2009: 50 2010: 75 2011: 75

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

1)The number of LRFs that adopt vegetable rotations/planting sequences, and insect control practices developed by this research; 2) number of LRFs that enter ornamental horticultural production, and 3) number of contact with clientele at workshop, field days, demonstrations, etc.

Outcome Type: Short

2007: 10 2008: 50 2009: 75 2010: 75 2011: 100

20. External factors which may affect outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Government Regulations

Description

Natural disaster such as drought, chilling temperatures, storm, etc. may affect the production. The economy will affect production cost as well as market prices. Government regulations affect crop selection and planting decisions on farm.

21. Evaluation studies planned

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

Description

The number and percentage of farmers adapting outcomes of research. Profitability of farms that adopt outcome of the research.

22. Data Collection Methods

- Sampling
- Mail
- Telephone
- On-Site
- Unstructured
- Observation
- Journals

Description

A survey of small farm and limited resources farmers will be conducted to determine adoption of practices taught. This information and feedback will be further utilized with the UAPB Small Farm Project. Feedback from the UAPB Small Farm Project will guide this program as well.

1. Name of the Planned Program

Aquaculture Alternatives in Arkansas

2. Program knowledge areas

- 308 10% Improved Animal Products (Before Harvest)
- 302 10% Nutrient Utilization in Animals
- 307 50% Animal Management Systems
- 311 10% Animal Diseases
- 602 10% Business Management, Finance, and Taxation
- 603 10% Market Economics

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

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

5. Brief summary about Planned Program

Aquaculture is a major and diverse industry in Arkansas. This program addresses all species and production systems other than catfish and baitfish, including sportfish, marine shrimp, prawns, crawfish, carps, and tilapia. Both production and marketing requirements are addressed.

6. Situation and priorities

Arkansas fish farmers are seeking new crops to diversify their operations. Baitfish markets are not expanding, and catfish prices have been hurt by competition from imports. The priority is to facilitate the continued operation of existing farms, and the development of new aquaculture businesses.

7. Assumptions made for the Program

That research will identify economically viable alternative aquaculture crops.

8. Ultimate goal(s) of this Program

To improve the economy of rural Arkansas through the development of new businesses.

9. Scope of Program

- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	1.3	0.0	0.8
2008	0.0	1.3	0.0	0.8
2009	0.0	1.3	0.0	0.8
2010	0.0	1.3	0.0	0.8
2011	0.0	1.3	0.0	0.8

Outputs for the Program

13. Activity (What will be done?)

Compile existing information on alternative aquaculture crops, budgets and markets for those crops. Disseminate the information through newsletters, fact sheets, presentations, and individual contacts. Year 1. Fact sheet on aquaculture alternatives. Field day poster presentation on alternative species. Year 2. Update fact sheet on small scale catfish production. Revise fact sheet on baitfish budgets. Year 3. Revise fact sheet on holding fish for sale. Year 4. Revise fact sheet on using existing ponds for fish production. Year 5. Revise fact sheet on cleaning fish for sale.

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

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Other 1 (Educational Meetings)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

County Extension faculty, existing fish farmers and potential farmers.

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	60	350	0	0
2008	60	350	0	0
2009	60	350	0	0
2010	60	350	0	0
2011	60	350	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 of Peer Reviewed Journal Articles

2007: 2	2008: 5	2009: 8	2010: 2	2011: 4

Output Target

Number of publications

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

Output Target

Number of Presentations

2007: 4	2008: 4	2009: 3	2010: 2	2011: 2

Output Target

Number of Published Abstracts

2007: 3	2008: 4	2009: 4	2010: 2	2011: 2

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of Arkansans gaining access to needed information

Outcome Type: Short

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

Outcome Target

Number of Arkansans adopting sound management practices

Outcome Type: Medium

2007: 150	2008: 150	2009: 150	2010: 150	2011: 150

Outcome Target

Number of Arkansans Increasing Efficiency, and Profitability

Outcome Type: Long

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

Outcome Target

Number of researchers and producers gaining knowledge from results from presentations and publications

Outcome Type: Short

2007: 200	2008: 200	2009: 200	2010: 100	2011: 100

Outcome Target
Number of researchers that will cite results

Outcome Type: Medium

2007:	0	2008:	0	2009:	2	2010:	2	2011:	2

Outcome Target
Number of producers that will modify feeding and management

Outcome Type: Medium

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

Outcome Target
Percent decrease in cool weather mortalities and decrease in off-flavor

Outcome Type: Long

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

Outcome Target
Percent of cool weather plankton-related problems that will decrease

Outcome Type: Long

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

Outcome Target
Percent of warm weather plankton-related problems that will decrease

Outcome Type: Long

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

Outcome Target
Number of producers willing to test successful ingredients or feeding strategies on a commerical scale

Outcome Type: Medium

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

Outcome Target
Percent of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Outcome Type: Long

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

20. External factors which may affect outcomes

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

Description
Changing market demands for aquaculture products, media coverage of aquaculture related developments, fish prices and demand, equipment failure - Factors affecting overall profitability of fish culture such as fuel costs, weather, competition and consumer demand for alternative species.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description

{NO DATA ENTERED}

22. Data Collection Methods

- Sampling
- Observation

Description

{NO DATA ENTERED}

1. Name of the Planned Program

Aquaculture Equipment and Information Development Program

2. Program knowledge areas

- 404 50% Instrumentation and Control Systems
- 402 50% Engineering Systems and Equipment

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

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

5. Brief summary about Planned Program

Fish farming equipment used in the aquaculture industry has not been improved substantially for over 30 years. There is substantial room for improvement and potential to improve farm efficiencies by developing new equipment and new information technology. This program will focus on evaluating a newly-designed trawl as an alternative sampling device. The optimal sample size to estimate pond inventories will be determined through computer simulation. In-pond grading systems and a confinement production system for catfish will be tested.

6. Situation and priorities

Few improvements have been made to commercial fish farming equipment since the early 1970s. Decreasing profit margins, a decreasing labor pool, and changing market demands for aqua-cultured products have resulted in a need for improved harvesting, hauling and production equipment. Catfish farmers often desire to estimate the inventory of their fish farms for future planning and financial assessment. The current sampling method is a seine net and it is exhausting in time and effort. A compact trawl net is considered as an alternative sampling device. The questions are how many trawl samples and how many subsamples from each trawling should be collected to provide an unbiased view of the catfish population structure in commercial ponds, and to asses the efficiency of the trawl net as an alternative sampling device and find the optimal sample size through computer simulation.

7. Assumptions made for the Program

•A sufficient number of commercial producers are willing to cooperate in the program. •Further refinement and adoption of improved aquaculture equipment will improve farm efficiency and profitability. Previous experimental pond studies and pilot sampling studies conducted at University of Arkansas at Pine Bluff provide vital background information for building simulation models.

8. Ultimate goal(s) of this Program

Increase the number of aquaculture production facilities that adopt improved aquaculture equipment resulting in increased production efficiencies and profitability. •Finding optimal sample sizes for catfish inventory estimation. •Catfish farmers learn how to sample their inventory effectively •Catfish farmers will be able to estimate the catfish inventory effectively for their financial assessment.

9. Scope of Program

- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	1.3	0.0	0.3
2008	0.0	1.3	0.0	0.3
2009	0.0	1.3	0.0	0.3
2010	0.0	1.3	0.0	0.3
2011	0.0	1.3	0.0	0.3

Outputs for the Program

13. Activity (What will be done?)

•Further test and refine aquaculture equipment •Develop recommendations for appropriate use of new technologies •Monitor commercial production facilities adopting new technologies •Publish results •Give presentations •Design of computer experiments •Conduct computer simulations by programming •Reconfiguration of simulation models with feedbacks from extension specialists.

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

Extension	
Direct Methods	Indirect Methods
• One-on-One Intervention • Other 1 (Educational meetings)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

•Fish farmers throughout the southern region, primarily Arkansas Catfish producers •Arkansas Game and Fish personel •Research scientists •County Extension agents Catfish farmers

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	5	50	0	0
2008	10	50	0	0
2009	15	50	0	0
2010	20	50	0	0
2011	30	50	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 of Abstract Publications

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

Output Target

Number of Conference Presentations

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

Output Target

Number of Refereed Journal Publications

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of Commercial Arkansas Catfish Farmers Learning About New Technologies

Outcome Type: Short

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

Outcome Target

Number of Commercial Arkansas Catfish Farmers Adopting New Technologies

Outcome Type: Medium

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

Outcome Target

Number of Commercial Arkansas Catfish Farmers Increasing Efficiency and Profitability

Outcome Type: Long

2007: 4	2008: 10	2009: 10	2010: 5	2011: 5

Outcome Target

Number of Commerical Arkansas Catfish Farmers That Learned About New Methods to Access Fish Inventories

Outcome Type: Short

2007: 3	2008: 50	2009: 50	2010: 50	2011: 50

Outcome Target

Number of Commercial Arkansas Fish Farmers That Learned About New Handheld Computer Technologies for Record Keeping

Outcome Type: Short

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

Outcome Target
Number of Commercial Arkansas Catfish Farmers That Accurately Assess Their Fish Inventories

Outcome Type: Medium

2007:	3	2008:	10	2009:	20	2010:	30	2011:	40

Outcome Target
Number of Commerical Catfish Farmers That Utilized Hand Held Computer Technologies for Record Keeping

Outcome Type: Medium

2007:	2	2008:	3	2009:	5	2010:	10	2011:	15

Outcome Target
Number of Arkansas Fish Farmers tha Increased Their Management Efficiency or That Conducted Comprehensive Annual Financial and Economic Analysis Because of Better Fish Inventory Assessment Methods or the Use of Improved Compuerized Record Keeping Systems

Outcome Type: Long

2007:	1	2008:	5	2009:	10	2010:	15	2011:	20

Outcome Target
Percentage of Cafish Farmers that are Informed About the Effectiveness and the Optimal Sample Size of theTrawl Sampling Method Through Extension Specialists

Outcome Type: Short

2007:	10	2008:	30	2009:	50	2010:	70	2011:	90

Outcome Target
Percentage of Catfish Farmers that Effectively Adopt and Use the Optimal Sample Size of Trawl sampling for Inventory Estimation

Outcome Type: Medium

2007:	1	2008:	5	2009:	20	2010:	50	2011:	70

Outcome Target
Percentage of Satisfaction Rate of Farmers who Adopted the Trawl Sampling with Recommended Sample Size for Inventory Estimation

Outcome Type: Long

2007:	50	2008:	50	2009:	75	2010:	85	2011:	95

20. External factors which may affect outcomes

- Other ()

Description
•Changing market demands for aqua-cultured products. •Cash flow and fish supply on cooperating farms. •Catfish prices and demand. •Computer simulation properly mimic the characteristics of catfish population structure. •The results from this simulation study show that trawl sampling provides population information as good as the seine net, so that commercial farmers adopt trawl sampling as efficient and economical sampling method. •The study results will be actively and widely disseminated to catfish farmers through extension offices and specialists. •The catfish farmers are willing to try the suggested trawl sampling method and sample size recommendation.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description
{NO DATA ENTERED}

22. Data Collection Methods

- Tests

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Aquatic Plant Management in Arkansas Ponds

2. Program knowledge areas

- 307 100% Animal Management Systems

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

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

5. Brief summary about Planned Program

The majority of calls to county agents from farm pond owners relate to management of aquatic weeds. Extension support to county agents will include printed materials, in-service training, and weed control demonstrations. New issues requiring attention include herbicide - resistant varieties and aquatic nuisance species.

6. Situation and priorities

A major problem for many commercial aquaculturists and small pond owners is management of aquatic macrophytes. Thousands of acres of fishponds, livestock ponds, and ditches also have problems with aquatic vegetation. This results in many calls and information requests to CES county extension and AGFC offices. Commercial producers usually want to eliminate aquatic macrophytes from ponds. Small pond owners often want to eliminate certain aquatic plants and not others, based on both practical and aesthetic motives. Misinformation and confusion leads to wasted money and effort, and poor results in aquatic plant management (apm). To provide research-based information, assist in comparison and selection of methods and materials for timely application. Herbicide - resistant varieties pose special problems.

7. Assumptions made for the Program

The regulatory environment will remain fairly stable – grass carp marketing will continue, chemicals currently legal will remain so. Chemicals identified for cheaper, more effective control of Naiad and Pithophora species will be approved for use.

8. Ultimate goal(s) of this Program

Commercial growers and government agents will use good judgment regarding applications. Less time and money will be necessary to manage aquatic plants in Arkansas.

9. Scope of Program

- In-State Extension

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.4	0.0	0.0
2008	0.0	0.4	0.0	0.0
2009	0.0	0.4	0.0	0.0
2010	0.0	0.4	0.0	0.0
2011	0.0	0.4	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Disseminate existing information through mass media, fact sheets, direct electronic communications, group presentations, and individual contacts with clientele.

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

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Other 1 (Educational meetings) • Other 2 (Farm demonstrations)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

CES Agriculture Agents, pond managers, natural resource managers, and others.

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	30	1500	0	0
2008	30	1500	0	0
2009	30	1500	0	0
2010	30	1500	0	0
2011	30	1500	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 of Publications

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

Output Target

Number of Presentations

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 farm pond owners learning how to control aquatic weeds

Outcome Type: Short

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

Outcome Target
Number of farm pond owners experiencing fewer problems with aquatic weeds

Outcome Type: Short

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

Outcome Target
Number of farm pond owners implementing improved weed control

Outcome Type: Short

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

20. External factors which may affect outcomes

- Other ()

Description
Future introductions or new emergences of invasive aquatic plants may present major differences from past experiences.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description
{NO DATA ENTERED}

22. Data Collection Methods

- Sampling
- Observation

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Arkansas Ag Adventures - Agricultural Awareness

2. Program knowledge areas

- 806 100% Youth Development

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

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

5. Brief summary about Planned Program

Arkansas AG Adventures is a hands-on, outdoor, agricultural education program. It is a collaborative effort between the University of Arkansas at Pine Bluff and the University of Arkansas Division of Agriculture Cooperative Extension Service. Special focus is given to 4-H leadership skills, career building, and science education.

6. Situation and priorities

Arkansas is a diverse state that depends on a strong agricultural industry. Agriculture is Arkansas' largest industry, providing over $5 billion a year in farm income. Roughly one-half of the state's land is devoted to agriculture, and our climate and topography make it well suited for the production of a broad spectrum of commodities. Nationally, Arkansas ranks first in the production of rice and second in the production of broilers. Arkansas is also highly ranked in the production of catfish, turkey, cotton and soybeans.

Although Arkansas depends on agriculture, it is seldom taught in elementary or secondary schools. Along with the fact that most children are two to three generations away from the farm, there is an increasing need for agricultural awareness. Producer Focus Groups and results from the Farm Crisis Survey both identified a significant need, particularly with children and young people, for an increase in factual public information and education regarding production agriculture. In response, a center to teach youth about agriculture was established on the University of Arkansas at Pine Bluff Small Farm Outreach and Water Management Center in Lonoke, Arkansas.

Children learn a variety of subjects through hands-on lessons at the center whether they come from rural or urban schools. The program also provides in-school visits to schools that may not be able to send children to the center due to cost or travel restraints.

7. Assumptions made for the Program

Children in today's schools are the decision makers of tomorrow. As such they need to learn about the natural world that exists around them and about basic issues which will impact on their food supply and environmental quality. Receiving vibrant challenging hands-on instruction about agriculture and its importance is a relevant learning experience for these future decision makers, especially those in urban areas.

8. Ultimate goal(s) of this Program

To increase understanding of agriculture and ultimately encourage more youth to seek careers in the fields of agriculture, science, math, engineering, and technology.
To increase the understanding of agriculture and its benefits to the general public.

9. Scope of Program

- In-State 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	0.5	1.1	0.0	0.0
2008	0.5	1.1	0.0	0.0
2009	0.5	1.1	0.0	0.0
2010	0.5	1.1	0.0	0.0
2011	0.5	1.1	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Activities include field days at the UAPB Small farm Outreach and Water Management Center, camps at the Arkansas 4-H Center, exhibits at educational fairs, and community and classroom workshops.

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

Extension	
Direct Methods	Indirect Methods
• Education Class • Workshop • Group Discussion • Demonstrations	• Web sites

15. Description of targeted audience

Although all youth and adults can be a part of the program, special emphasis is given to youth in grades 4-6 and their formal educators.

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	100	10	2000	200
2008	110	10	2250	200
2009	120	10	2500	200
2010	130	10	2750	200
2011	140	10	3000	200

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

To increase the understanding of agriculture and its benefits to the general public.

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

Output Target

To encourage youth to seek careers in agriculture, math, science and engineering through field days at the farm.

2007: 5	2008: 7	2009: 10	2010: 12	2011: 15

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

To increase the understanding of agriculture and its benefits to the general public.

Outcome Type: Short

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

Outcome Target

To encourage youth to seek careers in the fields of agriculture, science, math, engineering, and technology through field days at the center.

Outcome Type: Short

2007: 5	2008: 7	2009: 10	2010: 12	2011: 15

20. External factors which may affect outcomes

- Economy
- Appropriations changes
- Competing Programatic Challenges

Description

SInce this program targets students and formal educators, any changes in frameworks and/or school policies can affect the number of programs/field trips that can be allowed for schools. Another factor could be competition from non-educational agri-tourism events such as corn maizes.

21. Evaluation studies planned

- Retrospective (post program)
- Before-After (before and after program)

Description

Effectiveness of program on knowledge content management.
Effectiveness of program and logistics.

22. Data Collection Methods

- Whole population
- On-Site
- Other (notes and drawings)

Description

Pre-Post tests are given to youth who participate in camps that last more than one day. Assessment tools such as thank you notes and drawings will be used for informal camps one day or less.

1. Name of the Planned Program

Breeding and Biotechnology

2. Program knowledge areas

- 202 30% Plant Genetic Resources
- 201 20% Plant Genome, Genetics, and Genetic Mechanisms
- 203 30% Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 211 20% Insects, Mites, and Other Arthropods Affecting Plants

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

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

5. Brief summary about Planned Program

The program is designed to develop improved cowpea cultivars that resist biotic and abiotic stresses. Through biotechnology, transgenic cowpeas containing insect resistant genes will be developed for the benefit of small-farm, limited resource farmers in Arkansas and elsewhere. Conventional breeding will be done to produce cowpeas with improved characteristics such as drought resistance, yield, fresh pod color, pod length, seed size and synchronized maturity for adoption by limited resources producers.

6. Situation and priorities

Cowpea is important as an alternative crop for small-farm, limited-resource farmers, particularly to those farming in the lower Mississippi river delta. Cowpea is produced mainly in Alabama, Arkansas, California, Georgia, Louisiana, Mississippi, Missouri, South Carolina, Tennessee, and Texas. However, lack of cultivars with characteristics such as high yield, uniform pod maturity, erect plant type for mechanized harvesting, pod sell-out, and drought resistance has hindered the production efficiency. Cowpea is also severely infected by insects such as pod borer and storage weevils causing significant damage to crop production and yield. Conventional breeding (selection and combining ability) will be performed to produce high potential cowpea lines for adoption by limited resource producers. The primary plant traits of focus for selection will include fresh pod color, length, seed size and maturity for mechanical harvest and variety adoption. Techniques of genetic engineering will be used to produce transgenic cowpeas that prevent pod borer and storage weevil infestation. Current cowpea cultivars do not offer protection against insects. Production of insect resistant cowpeas will lead to increased yield and profits for the limited resource farmers.

7. Assumptions made for the Program

The small-farm, limited-resource farmers will be able to increase yield by adopting the cowpeas with improved characteristics such as insect and drought resistance, fresh pod color, length, seed size, uniform maturity for mechanical harvest etc.

8. Ultimate goal(s) of this Program

- Production of insect and drought resistant cowpeas - Production of cowpeas for increased yield.

9. Scope of Program

- In-State Extension
- In-State Research

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.1	0.0	2.1
2008	0.0	0.1	0.0	2.1
2009	0.0	0.1	0.0	2.1
2010	0.0	0.1	0.0	2.1
2011	0.0	0.1	0.0	2.1

Outputs for the Program

13. Activity (What will be done?)

- Conduct research experiments - Research publications - Presentation in the conferences and Field day - Extension publications

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

Extension	
Direct Methods	Indirect Methods
• Group Discussion • One-on-One Intervention • Demonstrations	• Newsletters • Web sites

15. Description of targeted audience

Small-Farm, limited resource farmers

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	50	75	25	50
2008	50	75	25	50
2009	50	75	25	50
2010	50	75	25	50
2011	50	75	25	50

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

{NO DATA ENTERED}

: {NO DATA ENTERED} : {NO DATA ENTERED} : {NO DATA ENTERED} : {NO DATA ENTERED} : {NO DATA ENTERED}

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

{NO DATA ENTERED}

Outcome Type:

2007: {NO DATA ENTERED} 2008: {NO DATA ENTERED} 2009: {NO DATA ENTERED} 2010: {NO DATA ENTERED} 2011: {NO DATA ENTERED}

20. External factors which may affect outcomes

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

Description

Natural disasters such as drought, weather may affect the outcome.

21. Evaluation studies planned

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

Description

{NO DATA ENTERED}

22. Data Collection Methods

- Mail
- Telephone
- On-Site
- Unstructured
- Observation
- Journals

Description

{NO DATA ENTERED}

1. Name of the Planned Program

Controlling Predators of Larval Fish

2. Program knowledge areas

- 312 100% External Parasites and Pests of Animals

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

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

5. Brief summary about Planned Program

This program will focus on controlling insect predators that cause major losses of baitfish fry. Screening trials will indentify new chemicals and scientists will work with regulatory personnel to obtain approvals. Farm demonstrations will be used to teach proper and effective application methods.

6. Situation and priorities

Larval baitfish are subject to predation by insect larvae and crustaceans. Farmers must use pesticides to control these pests and all pesticide applications must be done in a legal and environmentally friendly manner. New chemicals are constantly needed to maintain regulatory status and to improve efficacy. Priorities • To discover replacements for existing chemicals facing regulatory challenges • To discover new treatments that improve safety and also provide increased efficacy • To work with industry and regulatory agencies to provide labeling for legal use of important pesticides

7. Assumptions made for the Program

That willing and cooperative industry partners will participate in field studies during the development of new treatment(s) That the regulatory climate will allow treatment(s) for the control of larval fish predators.

8. Ultimate goal(s) of this Program

An inexpensive fully labeled pesticide that will be used by farmers to safely and effectively gills copepods, dragon flies, crawfish, and backswimmers without harming fish.

9. Scope of Program

- In-State Extension

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.3	0.0	0.1
2008	0.0	0.3	0.0	0.1
2009	0.0	0.3	0.0	0.1
2010	0.0	0.3	0.0	0.1
2011	0.0	0.3	0.0	0.1

Outputs for the Program

13. Activity (What will be done?)

Research will be conducted to • Determine the toxicity of pesticides to fish and to target organisms • Extension programs will run field trials of promising compounds • Provide regulatory expertise for new labels • Demonstrate proper use of new chemicals to farmers • Provide educational materials regarding the newly developed treatments during workshops, farm visits and personal letters.

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

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Other 1 (Educational meetings) • Other 2 (Farm demonstrations)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

Commercial baitfish producers.

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	40	100	0	0
2008	40	100	0	0
2009	40	100	0	0
2010	40	100	0	0
2011	40	100	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 of Publications

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

Output Target

Number of Presentations.

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target
Number of major farms adopting treatments

Outcome Type: Short

2007:	0	2008:	10	2009:	0	2010:	0	2011:	0

Outcome Target
Number of farms reporting improved control

Outcome Type: Short

2007:	0	2008:	0	2009:	3	2010:	0	2011:	0

20. External factors which may affect outcomes

- Other ()

Description
Statutory changes in state and federal pesticide regulations

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description
{NO DATA ENTERED}

22. Data Collection Methods

- Sampling
- Observation

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Cropping Systems

2. Program knowledge areas

- 205 100% Plant Management Systems

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

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

5. Brief summary about Planned Program

Demonstrations will be conducted on a working farm by using multiple acre plots rather than using small plot sizes as is customarily done in agronomic research. The demonstrations will utilize conservation tillage verses conventional tillage, level basin soybean production verses soybean production on a field with a 0.1 ft. /100 ft. grade and the use of round-up ready soybeans verses conventional soybeans during each of the next five years. A comparative analysis will be conducted to show how utilizing these practices as Best Management Practices (BMPs) can improve the bottom line for producers. This information will be a valuable teaching tool during biennial field days as well as ad hoc site visits by farmers to the University''s Pearlie S. Reed and Robert L. Cole Small Farm Outreach Wetland and Water Management Center (SFO-WWMC). Experience has shown that farmers are more likely to adopt the practices if they can see them in operation and see an increased profit margin as compared to their normal practices.

6. Situation and priorities

Limited Resource Farmers (LRF) and Socially Disadvantaged Farmers (SDF) must become efficient in their row crop operations if they intend to stay in business. The small profit margins in wheat and soybean crops that are often grown by these farmers mean that these farmers must maximize their yields to show a profit. However, these farmers usually do not produce yield that are on par with larger farmers. One reason for this is that LRF and SDF are slow to adopt Best Management Practices (BMPs) at the same rate that larger farmers do. This fact places LRF and SDF at a decided disadvantage and places them in danger of losing their livelihood. If they are unable to make a living, the farmers and their families may place an additional burden on society and reduce the diversity in our American agricultural system.

7. Assumptions made for the Program

The benefits of conservation tillage have been shown in many parts of the nation; however, its adoption in Arkansas has been slow as compared to Midwestern states. Demonstrating that conservation tillage improves the bottom line and helps to conserve soil should help farmers to change their minds about the practice. Likewise, if level basin soybean production and/or using round-up ready soybeans are proven to be economically viable; LRF and SDF are likely to adopt these practices.

8. Ultimate goal(s) of this Program

1. The adoption of two or more of the demonstrated BMPs by LRF and/or SDF in the Arkansas delta to improve crop yields. This will lead to reduce environmental contamination by pesticides. 2. The development of enterprise budgets for wheat, soybeans and rice production that show differences in conventional production practices vs. BMPs.

9. Scope of Program

- In-State 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	0.0	2.8	0.0	0.5
2008	0.0	2.8	0.0	0.5
2009	0.0	2.8	0.0	0.5
2010	0.0	2.8	0.0	0.5
2011	0.0	2.8	0.0	0.5

Outputs for the Program

13. Activity (What will be done?)

Demonstrations on BMPs will be conducted at the SFO-WWMC site. Field days will be held to present findings and show demonstrations at the SFO-WWMC. Relevant information will be provided to field day participants and to other interested individuals.

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

Extension	
Direct Methods	Indirect Methods
• Workshop • Other 1 (field Days)	• Web sites • Other 1 (Annual Reports)

15. Description of targeted audience

LRF and SDF serviced by the UAPB as well as other farmers who attend field days and/or visit the SFO-WWMC. Other audiences include policy makers, Extension educators, Natural Resources Conservation Service employees, U. S. Army Corps of Engineers employees, home owners and the 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	5000	10000	400	4000
2008	5000	10000	400	4000
2009	5000	10000	400	4000
2010	5000	10000	400	4000
2011	5000	10000	400	4000

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

1. The number of site visits by farmers 2. The number of participants that attend field days 3. Number of fact sheets developed 4. Annual Reports 5. Number of presentations made at meetings for interested groups 6. Number of partnerships developed

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Short term outcome will be measured by the number of LRF and SDF that attend field days and observe BMP demonstrations and the knowledge gained by participants.

Outcome Type: Short

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

20. External factors which may affect outcomes

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

Description

Many LRF and SDF are farming under dry land conditions this makes them susceptible to drought conditions and their yield is usually not comparable to that of farmers using irrigation. These farmers have limited resources to provide the necessary inputs into their farming operation; therefore, they have to borrow operating capital. Sometimes borrowing creates a problem because some farmers have poor credit. These factors are likely to affect their rate of BMP adoption. Public policy changes often affect farming operations and budget considerations for federal and local budgets. Likewise, a shift in priorities of the Extension program on the local level usually influences the types of programs that are to be offered.

21. Evaluation studies planned

- During (during program)

Description

A survey will be given to LRF and SDF who attend field days to determine their interest in adopting BMPs. Comments and feedback will be solicited from individuals and groups that tour

22. Data Collection Methods

- On-Site
- Observation

Description

The 2501 staff assists most of the LRF and SDF in the state of Arkansas. The staff members help the farmers to prepare their loan applications. The 2501 staff will be asked to survey farmers to determine their adoption of BMPs.

1. Name of the Planned Program

Extension Livestock Management Program

2. Program knowledge areas

- 806 40% Youth Development
- 301 10% Reproductive Performance of Animals
- 306 15% Environmental Stress in Animals
- 307 25% Animal Management Systems
- 303 10% Genetic Improvement of Animals

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

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

5. Brief summary about Planned Program

Extension Livestock Management Program. The Extension Livestock Management Program is a state-wide program that provides unbiased, research based information to livestock producers, youth involved in livestock activities, county agents, UAPB staff, other organizations, and other individuals. Special target clientele are small livestock producers. The main species covered are beef cattle and goats with minor activities with swine and sheep. The major areas of work include feeds, feeding livestock, rations, herd health, herd or flock records, animal identification (including NAIS), working facilities, cow herd performance testing, bull breeding soundness clinics, breeding seasons, and herd breeding programs. The goal of the program is to improve the level of management in the herd or flock. With improved management, herd production and income should increase and help make the livestock operation more competitive. The Extension Livestock Program is also involved in youth (4-H and FFA)livestock activities. These activities include conducting competitive events at the Southeast District Fair, the Arkansas State Fair, the Southeast District 4-H Horse Show and conducting the 4-H Veterinary Science Project for Arkansas.

6. Situation and priorities

Arkansas ranks seventeenth in the nation in beef production with 30,000 to 31,000 producers and somewhat over 980,000 beef cows. This equals an average herd size of just over 30 cows. Actually 80% of the herds in state have 30 cows or less. The vast majority of these herds are sidline operations to off-farm jobs, other farming operations, or they are a retirement vocation. In most of these herds the level of reproduction and the level of production is low or below average because they are not being managed as an income producing enterprise or business. In the last several years the interest in meat goats has grown rapidly. The meat goat business is very similar to beef cattle in that these are sideline operations. Many livestock producers, as well as limited resource producers and small farmers have recently expressed a need for information and help on breed selection, herd health, improved herd performance, marketing information, herd fertility, and general herd management. Improvements in these specific management areas as well improvements in general herd or flock management will improve the profitability and competitiveness of these livestock operations by helping the producer market more animals, market heavier animals, and market animals with more market value. Youth livestock projects are quite popular(market hogs, market lambs and market goats). They are shown at county, district and at the state fair. These are usually some of the largest shows on the fairgrounds and are an excellent means of introducing livestock production to youth.

7. Assumptions made for the Program

Livestock producers will improve total herd and flock management as a result of knowledge obtained through various educational activities. These management practices will increase the net farm income. Youth will gain some basic knowledge about animal agriculture as well as develop an interest in animal agriculture from their participation in animal projects and area and state livestock shows.

8. Ultimate goal(s) of this Program

The ultimate goal of this program for adult livestock producers is to have them achieve more profit from their herds and to be more competitive in the livestock industry. The ultimate goal for youth is to have them develop an appreciation for animal agriculture, develop a desirable work ethic, and develop a sense of responsibility through their participation in livestock projects and livestock shows.

9. Scope of Program

- In-State Extension

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	1.0	0.0	0.0
2008	0.0	1.0	0.0	0.0
2009	0.0	1.0	0.0	0.0
2010	0.0	1.0	0.0	0.0
2011	0.0	1.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Primary activities with producers will be individual farm visits, educational meetings, field days, farm demonstrations, office conferences, and the preparation and/or distribution of educational materials. Primary youth activities are the Southeast District Fair, swine shows at the State Fair, the Southeast District 4-H Horse Show, and the Arkanas 4-H Veterinary Science Project activities.

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

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Demonstrations • Other 1 (field days) • Other 2 (educational meetings)	• Other 1 (distribution of educational mate) • Other 2 (newspaper articles)

15. Description of targeted audience

Livestock producers. 4-H and FFA 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	150	25	1000	0
2008	150	25	1000	0
2009	150	25	1000	0
2010	150	25	1000	0
2011	150	25	1000	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

Output measures will be number of producers working with the program (175 annual contacts), increase in number of animals weaned per breeding age female, and increase in average weaning weight of animals in cooperating herds. Number of youth (1000 annual contacts) participating in various livestock activities.

2007: 1175 2008: 1175 2009: 1175 2010: 1175 2011: 1175

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of producers involved in the livestock program.

Outcome Type: Short

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

20. External factors which may affect outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Government Regulations
- Other (market prices)

Description

Drought can have the most serious effect by limiting pasture growth and hay supplies for cattle, goats and sheep. In the worst case situations, some producers have to sell out because they do not have enough pasture or hay for their animals and they are unable to purchase hay for feed. Government regulations can have a major impact. The NAIS system may be the biggest problem for some small producers because they have never kept records. some may go out of business before they will keep records and report information on animal sales or movement. Market price can be a major item determining whether some producers will stay with a particular enterprise. The market for cattle and goats looks good for the next several years so this should not be a major factor.

21. Evaluation studies planned

- During (during program)

Description

Evaluation on participating herds will come from herd records and performance records. If these can be secured on a portion of the participating herds, we will extrapolate it to the other herds.

22. Data Collection Methods

- Other (herd records)

Description

Basic herd records will be kept on as many herds as possible along with performance records on some herds. These records will measure improvement in the level of reproduction and the increase in herd production.

1. Name of the Planned Program

Families, Youth, and Communities

2. Program knowledge areas

- 802 100% Human Development and Family Well-Being

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

4. Program duration : Short-Term (One year or less)

5. Brief summary about Planned Program

This planned program will examine predictors of quality in licensed early childhood programs including Head Start Centers and family day care homes in Southeast Arkansas (approximately 269 centers & family homes). A survey will be given to directors, lead teachers and parents in early childhood programs and day care family homes to gain their perceptions of what is a quality program. Respondents will assign an overall rating of their center using a one- to seven-point scale, with one indicating poor quality and seven indicating excellent quality. This survey will also collect demographic data on salaries (teachers and directors), level of education (teachers, parents and directors), and education and training (teachers and directors). The survey will also include a question in the comment section (What do you feel the center needs to become a quality center and what training is needed?). Comparison will be made of the education, training, and salaries to the quality rating score from the Early Childhood Environment Rating Scale-Revised (ECERS-R), Infant/Toddler Environment Rating Scale-Revised (ITERS-R) and Family Daycare Home Environment Rating Scale (FDCERS) for correlative purposes.

6. Situation and priorities

There are approximately 269 childcare centers, including Head Start centers and family day care homes, in Southeast Arkansas. Of these, 110 centers are located in Jefferson County. Students in the University of Arkansas at Pine Bluff's Administration and Supervision of Childcare Centers class visited a total of twenty centers and family homes during the Fall of 2003, and assessed center quality using the rating scales. This informal observation by the students reported scores of one, indicating poor quality, to an average score of four on a likert-type seven-point scale for the family homes and center-based programs. A score of one indicates poor or inadequate quality, a score of three, minimal or mediocre quality, a score of five, indicates good quality and a score of seven suggests excellent quality. No published research has been found that assesses predictors of quality programs in Arkansas, Jefferson County or Southeast Arkansas. This research project will assess the quality practices in childcare centers and family day care homes in Jefferson County and Southeast Arkansas and increase the awareness of what research suggests that quality programs look like. Currently, there are no centers or family day care homes in Jefferson County that are accredited by the National Association for the Education of Young Children (NAEYC) and only four were found in Southeast Arkansas. Accreditation status is another indicator of a quality center or family day care home (Accreditation Criteria and Procedures of the National Association for the Education of Young Children, 1998).

7. Assumptions made for the Program

Early childhood staff will be motivated to change to meet the standards and accreditation as set forth by NAEYC. Early childhood and family home daycare directors, teachers, parents, researchers, and stakeholders will form coalitions to address problems. Early childhood and family home daycare centers' staff will be hired with necessary skills and abilities.

8. Ultimate goal(s) of this Program

The ultimate goal(s) of this program will be as follows: to identify predictors of quality in early childhood programs in Southeast Arkansas; to assess the quality of the 269 early childhood programs in Southeast Arkansas; to identify quality practices present in early childhood programs in Southeast Arkansas; to enhance the quality of early childhood programs by disseminating study findings to early childhood programs and agencies in Southeast Arkansas and at professional meetings; and to determine the feasibility of obtaining accreditation and quality approval for early childhood programs and day care family homes in Southeast Arkansas by the National Accrediting body of The National Association for the Education of Young Children (NAEYC) and the Arkansas Quality Approval System. The Arkansas Child Care Approval System has a quality approval rating for early childhood programs. Presently, there are 23 centers that have Quality Approval Rating in Southeast Arkansas and one center in Jefferson County where approximately 110 centers are located. Therefore, it is also the desire of this program to increase the number of centers and family homes that have the Quality Approval status. Childcare centers, which can verify accreditation through the National Academy of Early Childhood Programs, a division of NAEYC, will be considered approved for the purposes of these regulations. NAEYC certification is good for the three (3) year certification period. Verification of accreditation status must be provided to the Division of Child Care and Early Childhood Education each year upon renewal in order to maintain approved status. Family day care homes, which can verify accreditation through the National Association for Family Child Care (NAFCC),

will be considered approved for the purposes of these regulations. NAFCC certification is good for the three (3) year certification period. Verification of accreditation status must be provided to the Division each year upon renewal in order to maintain approved status (Arkansas Childcare Approval System, Arkansas Department of Human Services, 1997).

9. Scope of Program

- In-State Research

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.0	0.0	1.3
2008	0.0	0.0	0.0	1.3
2009	0.0	0.0	0.0	1.3
2010	0.0	0.0	0.0	1.3
2011	0.0	0.0	0.0	1.3

Outputs for the Program

13. Activity (What will be done?)

Once data are collected from licensed early childhood program directors on their perception of quality, an on site two-hour observation using the environmental rating scales will be conducted at each center responding to the survey and agreeing to participate further in the study. It is expected that at least 50% of the childcare facilities will participate in the full study. The rating scales are used to measure quality in childcare centers and are based on a one-to seven-point scale, on a continuum of one for poor quality and seven for excellent quality. The reported rating scores given by the teachers, directors, and parents will be compared to the environmental rating scale score to determine consistency between perceptions reported on the survey and actual scores obtained during the observation. Informational meetings concerning accreditation and the Arkansas Quality Approval System process will be introduced to center directors during the observational visit. Examples of outputs may include: processes of research studies, dissemination of research results, writing and publishing articles, conducting educational workshops, attending conferences, providing training for early childhood and head start staff, and partnering with headstart centers to keep the participating childcare centers in this program informed.

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 • Other 1 (Direct mail)	• Public Service Announcement • Newsletters • Web sites

15. Description of targeted audience

Our target audience will be the day care home operators, day care center directors, centers' employees, children in day care centers, teachers, and parents in Jefferson County and Southeast Arkansas' early childcare centers, head start centers, and

family daycare homes.

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	134	135	500	500
2008	134	135	500	500
2009	134	135	500	500
2010	134	135	500	500
2011	134	135	500	500

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Day care home operators, day care center directors, centers' employees, children in day care centers, teachers, and parents of family day care home, day care, and headstart centers in Jefferson County and Southeast Arkansas.

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Directors, teachers, and parents in early childhood programs, head start centers, and family daycare homes in Jefferson County and Southeast Arkansas will be assessed for center quality and will serve as our outcome targets.

Outcome Type: Short

2007: 376 2008: 376 2009: 376 2010: 376 2011: 376

20. External factors which may affect outcomes

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

Description

External factors which may may affect the outcomes are as follows: program implementation, participants and recipients, the speed and degree to which change occurs, and staffing patterns and resources available needed to obtain an acceptable quality

rating according to the environmental rating scales' criteria used to assess each participating early childhood/family daycare home center in the program. For instance, NAEYC's suggested criteria for high-quality early childhood programs include: (a) positive interactions among teachers and children; (b) a curriculum that engages children actively in the learning process through developmentally appropriate learning experiences; (c) teachers and families work closely in a partnership; (d) the program is staffed by adults with formal education in early childhood education with continuing staff development; (e) the program is efficiently and effectively administered, sufficiently staffed to meet the needs of and promote the physical, social, emotional, and cognitive development of children; (f) the indoor and outdoor physical environment fosters optimal growth and development through opportunities for exploration and learning; (g) the health and safety of children are protected and enhanced, and the nutritional needs of children and adults are met; and (h) an ongoing and systematic evaluation of the program is done to ensure quality (Accreditation Criteria and Procedures of the National Association for the Education of Young Children, 1998).

21. Evaluation studies planned

- Before-After (before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

Description

Our planned evaluation studies may include before and after program assessments. In addition, comparisons between program participants (individuals, group, organizations) and non-participants also may be planned.

22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Observation

Description

At the initial stage, a cover letter with the survey will be sent to early childcare and home daycare center directors stating the purpose and importance of the survey informing them about the benefits of their participation in the study. Instructions will be outlined in the cover letter asking the directors to provide us with a list of their teachers/parents, so that surveys can be mailed to them as well. Precautions will be taken to ensure confidentiality of all respondents. A deadline and method for returning questionnaires will also be stated in the letter. Prior to the return deadline, a reminder announcement and/or telephone call will be placed to those participants who have not responded about completing the survey as a second follow-up. Finally, after the completion deadline, a postcard reminder will be mailed to non-respondents as a third follow-up in order to obtain at least a 50% returned response rate. Also, the quality of 269 early childhood programs in Southeast Arkansas will be assessed from data obtained from surveys administered in objective/goal 1. The surveys will be pilot tested with five centers in Jefferson County. The collection of baseline data will include surveying the directors, teachers, and parents in both center-based and family homes to gain basic demographic information about the early childhood workforce in Southeast Arkansas. Included on the survey will be an open-ended interview question to directors, teachers and parents to allow them an opportunity to give in-depth views on their perceptions of childcare quality. Surveys will be distributed to the 269 early childhood programs in Southeast Arkansas. The director will be asked to distribute the surveys at their center to approximately four teachers per center (unless it is a family day care home) and approximately 10 parents per center. Approximately 4,050 surveys will be distributed with an expectation of a 75% return rate. A second mailing is anticipated to reach the 75% return rate. Three environmental rating scales will be used to identify quality practices present in each facility studied. These include the Early Childhood Environment Rating Scale-Revised (ECERS-R), Infant/Toddler Environment Rating Scale-Revised (ITERS-R), and Family Daycare Home Environment Rating Scales (FDCERS). The environment rating scales are observational assessments. Areas measured include space and furnishings, personal care routines, language/ reasoning, learning activities, interaction (child-child and adult-child), program structure and adult needs. The observers will be trained in using the environment rating scales to establish inter-rater reliability. Upon completion of this training and establishing inter-rater reliability, the trained observers will rate the early childhood programs that agreed, from the survey to be re-contacted, to participate in on-site observation using the environmental rating scales. A systematic random sampling will be used to assess the on-site observations of the 269 early childhood programs that agreed to be re-contacted to participate in this study.

1. Name of the Planned Program

Farm Pond and Community Fishing Pond Management

2. Program knowledge areas

- 134 100% Outdoor Recreation

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

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

5. Brief summary about Planned Program

This program addresses priority issues for the 100,000 owners of small impoundments in Arkansas, from both research and Extension perspectives. Priority issues include improved fish population structures, fewer aquatic weed problems, and improved fishing.

6. Situation and priorities

There are about 100,000 small impoundments in Arkansas. Sunfish and crappie often stunt at a small size in these ponds due to limited predatory control. Hybrid striped bass (HSB) prefer small prey, and may reduce prey populations so that stunting is prevented. Thus, HSB could be used to improve sunfish and crappie fisheries and to provide a new sport fish in ponds. • To measure HSB survival in farm ponds • To evaluate HSB prey selection • To determine predatory effects of HSB in farm ponds • To determine impacts of additional competition on largemouth bass • To develop management recommendations for using HSB in ponds Fishing participation has leveled off, and is consistently lower than the national average for groups such as females, African-Americans, and urban residents. A possible solution to the decline is to target underrepresented groups with fishing education programs such as Arkansas Game and Fish Commission's (AGFC) Family and Community Fishing Program (FCFP), Fishing Derby Program(FDP), and Hooked on Fishing, Not on Drugs Program (HOFNOD). However, little evaluation of these programs has been conducted. • To determine appropriate stocking frequencies for put-take species • To assess the effect of the FDP on fishing activity at derby locations • To monitor HOFNOD instructors and evaluate program components • To evaluate new species for put-take fisheries • To assess participant demographics, attitudes, and success • To evaluate the overall impact of the FCFP on angler recruitment There are about 100,000 ponds and small impoundments in Arkansas, many of which provide significant fisheries resources to the state. However, management of these resources often proceeds without the proper guidance, largely due to inadequate distribution of educational materials. This Extension program is designed to improve distribution of pond management information. • To respond to Extension Educator requests • To support pond owner management needs • To produce timely media releases on pond management • To produce and maintain on-line information resources for ponds • To design fact sheets and other necessary media.

7. Assumptions made for the Program

• HSB will grow and survive in Arkansas farm ponds. • HSB will eat pond prey species. • Pond owners will use HSB if recommended. • External funding will be maintained. • AGFC will adhere to experimental designs. • County Agents will facilitate distribution. • Management recommendations will be followed.

8. Ultimate goal(s) of this Program

Produce effective management recommendations for using HSB in ponds for prey control and fishery diversification. To enhance angler recruitment in Arkansas. Improve pond management in the state of Arkansas.

9. Scope of Program

- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.4	0.0	0.3
2008	0.0	0.4	0.0	0.3
2009	0.0	0.4	0.0	0.3
2010	0.0	0.4	0.0	0.3
2011	0.0	0.4	0.0	0.3

Outputs for the Program

13. Activity (What will be done?)

Research Activities Include: • Assessment of HSB requirements for water hardness in Arkansas farm ponds based on survival post-stocking using cage studies • HSB prey selection and competition with largemouth bass • Growth and condition of HSB under different prey communities • Influence of HSB on prey communities at two stocking densities. Extension Activities Include: • Produce recommendations for using HSB in ponds Research Activities Include: • Evaluation of the FCFP • Evaluation of the FDP • Evaluation of the HOFNOD Program Extension Activities Include: • HOFNOD teacher workshops • AGFC training • Assist AGFC with instructional activities and evaluation design • Organize and conduct Urban Fishing Symposium Extension activities include: • Conduct pond workshops and lectures • Maintain Farm Pond Management Website • Produce Farm Pond fact sheets and other resources • Write farm pond articles • Write and distribute monthly press releases for Extension Educator use • Conduct online and hands-on in-service training for Extension Educators

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

Extension	
Direct Methods	Indirect Methods
• One-on-One Intervention • Other 1 (Educational meetings) • Other 2 (Farm demonstrations)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

Commercial HSB producers Private impoundment owners and managers Extension Educators AGFC AR potential/current anglers HOFNOD Instructors

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	1830	9700	0	0
2008	1860	10800	0	0
2009	1860	10800	0	0
2010	1860	10800	0	0
2011	1860	10800	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 of Project Annual and Final Reports

2007: 2	2008: 2	2009: 0	2010: 0	2011: 0

Output Target

Number of Presentations and Scientific Meetings

2007: 5	2008: 2	2009: 1	2010: 0	2011: 2

Output Target

Number of Published Abstracts

2007: 5	2008: 2	2009: 1	2010: 0	2011: 2

Output Target

Number of Refereed Journal Articles

2007: 1	2008: 4	2009: 0	2010: 0	2011: 2

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of Research Recommendations Transferred to AGFC Staff

Outcome Type: Short

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

Outcome Target

Number of Presentations at Scientific Meetings

Outcome Type: Short

2007: 2	2008: 1	2009: 0	2010: 0	2011: 1

Outcome Target

Increse in fishing license sales in cities with AGFC programs

Outcome Type: Short

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

Outcome Target

Increase in ponds that are designed, stocked, and managed correctly

Outcome Type: Short

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

Outcome Target
Reduced number of pond problems

Outcome Type: Short

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

Outcome Target
Percent increase in contacts rearding hybrid striped bass

Outcome Type: Short

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

Outcome Target
Percent increase in requests for hybrid striped bass management recommendations

Outcome Type: Short

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

Outcome Target
Percent increase in sales for sport fishing

Outcome Type: Short

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

20. External factors which may affect outcomes

- Other ()

Description
Weather-related fish kills; poaching; predation of stocked HSB; low survival of stocked fish; HSB do not control prey AGFC participation, AGFC implementation of management recommendations. Server failure, weather, computer viruses, Educator or manager failure to follow recommendations.

21. Evaluation studies planned

- During (during program)

Description
{NO DATA ENTERED}

22. Data Collection Methods

- Other (Survey of farm pond owners)

Description
A formal evaluation study is planned for 2010-2011.

1. Name of the Planned Program

Food Animal Production and Management

2. Program knowledge areas

- 302 100% Nutrient Utilization in Animals

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

4. Program duration : Medium Term (One to five years)

5. Brief summary about Planned Program

The project will examine lowcost alternative feed sources for swine and goat producers as a method to assist small and limited resource farmers in southeast Arkansas to remain economically viable. The use of crop by products and other low-cost feed sources are increasingly utilized as feed by small farmers. An economic assessment of utilizing these low-cost feeds will be conducted.

6. Situation and priorities

Limited resource farmers in southeast Arkansas are constantly reviewing economically viable alternative farming to the traditional row crop agriculture. It is increasingly difficult for small-scale row crop farmers to remain economically viable. Meat goats and small swine production units have become attractive because of their low capital investment. Also goats can utilize the abundant crop by-products available in southeast Arkansas. The priority for this program would be to provide limited resource farmers in southeast Arkansas information needed for efficient utilization of crop by-products for goats and swine.

7. Assumptions made for the Program

The assumption made is that the outcome of the research will enable Southeast Arkansas farmers and their counterparts from other states of similar production levels, to profitably produce meat goats and swine as an alternative to current farming enterprises.

8. Ultimate goal(s) of this Program

The ultimate goal of this program is to provide information that will enable limited resource farmers to efficiently and economically produce meat goats and swine and increase their on-farm income and maintain economically viable operation.

9. Scope of Program

- In-State Extension
- In-State Research
- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.1	0.0	2.5
2008	0.0	0.1	0.0	2.5
2009	0.0	0.1	0.0	2.5
2010	0.0	0.1	0.0	2.5
2011	0.0	0.1	0.0	2.5

Outputs for the Program

13. Activity (What will be done?)

Conduct research experiments

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

Extension	
Direct Methods	Indirect Methods
• One-on-One Intervention • Demonstrations	• Public Service Announcement • TV Media Programs

15. Description of targeted audience

The targeted audience will include high school students, college students, extension agents, and livestock farmers.

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	45	100	60	40
2008	60	120	130	50
2009	65	150	160	50
2010	70	200	160	60
2011	80	200	160	60

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

There will be expected reduction in the cost of production (input) relative to the meat goats and pigs which will result to improvement in the economic earnings of the small farmers.
Indicators to be measured are: 1) the feed efficiency for both goats and swine; 2) feed conversion; rate of consumption of crop by-products and forages, (relative weight gain (growth) of goats and swine stocked in varying densities.

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of papers,abstracts,reports and conference presentations

Outcome Type: Medium

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

20. External factors which may affect outcomes

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

Description

Natural disasters such as droughts, and weather extremities would reduce forage and other crop yields leading to decrease in hay and crop by-product (CBP) outputs. With the reduction in CBP which forms the base feed for the animals, the goats will have less to eat and this will affect productivity and subsequently the farmers' income.

21. Evaluation studies planned

- After Only (post program)

Description

Forage utilization by goats stocked at varying densities (number of goats per acre) will be compared and evaluated. Growth performance of gilts and barons fed varying levels of crop byproducts and supplemental rations will be compared and evaluated. The post program evaluation will determined by the level of interest shown by farmers, extension personnel and processors, and the economic benefits reported by farmers.

22. Data Collection Methods

- Sampling
- Whole population
- Observation

Description

Data will be collected on all the whole population of animals that are involved in the experiments. However, forage yields and their nutrient compostion in the fields will be done by sampling. Growth and weight gain performance of animals will be observed.

1. Name of the Planned Program

Herbs, Spices, and Medicinal Crops

2. Program knowledge areas

- 701 30% Nutrient Composition of Food
- 712 10% Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxi
- 502 20% New and Improved Food Products
- 202 40% Plant Genetic Resources

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

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

5. Brief summary about Planned Program

This program will include further studies aiming at germplasm evaluation of selected herbs, spices, and specialty vegetables for their production potential, nutritional qualities, and functional food values. The objectives will be to test and evaluate varieties and experimental lines of bitter melon, bottle gourd, hot pepper, basal, sweetpotato and other leafy Ipomoea species for productivity and food & medicinal values and also to develop recipes and cooking methods. Field experiments and some of the laboratory experiments will be conducted at the UAPB Ag Research Center at Pine Bluff. Laboratory analyses will be conducted in collaboration with the University of Arkansas, Fayetteville (UAF) and Mississippi State University's Food Science Departments. Some phytochemical analyses of the herbs and spices may be conducted through private companies, if needed. Experiments will be conducted using 5 promising varieties of bitter melon for productivity. White and green bitter melons will be compared for their photosynthetic efficiency and Cucurbitacine contents. All new hot pepper lines will be analyzed for variability in nutritional and other functional food characteristics including flavor, heat, vitamins and antioxidant levels. Local and exotic varieties of sweet potatoes and other ethnically used leafy Ipomoea vegetables will be analyzed for alkaloids, Anthocyanins, antioxidant, and vitamin levels. About 5 varieties of sweet basal of different leaf colors and aroma will be analyzed for Anthocyanins and Antioxidant levels. Food processing, nutritional qualities of value-added food products, and quality protection and shelf life will be the final stage of the research program.

6. Situation and priorities

Nutrition-related health problems, especially hypertension, obesity, diabetes and arthritis are prevalent among disadvantaged rural and urban populations. Particularly minority elders in the Lower Mississippi Delta are vulnerable to these physiological diseases. Food consumption habits, dietary intakes, and meal preparation methods are believed to contribute to these problems. Many different plant products and produce are currently being used as nontraditional food items based on their perceived nutritional or medicinal qualities. Herbs and spices are used for adding taste, flavor and delicacy to foods. Some garnishing herbs such as sweet basal and cilantro are known for their medicinal values also. However, vegetables and fruits possessing higher functional food qualities are known to have major impacts on disease prevention and general health. Our past research on germplasm evaluation involving specialty herbs and vegetables and cooking and taste-testing of new food recipes using these vegetables generated interests in the stakeholders, plant scientists and nutritionists, as well as our collaborating partners in other universities. We plan to conduct in-depth studies on productivity and nutritional qualities of the selected herbs, spices, and vegetables as well as their potentials for providing new ingredients producing improved foods for better health.

7. Assumptions made for the Program

The high impact of better food habits using food ingredients of high functional values are well recognized by the plant and food scientists. Nontraditional food sources will improve dietery intake and thereby will have a significant impact on disease prevention within the target population. Cooking methods and food processing may affect food values for these new food sources. Our preliminary knowledge of the levels of functional compounds in bitter melon, hot pepper, basal, and Ipomoea species are indicative of a great promise of new health food development. Motivational publicity and demonstration will popularize nontraditional foods, and consumers will adopt new herbs and vegetables in their diet. The existing resources are adequate to run the project; however, phytochemical analyses are costly and may need additional funds. Outside collaboration will be needed for the project and will greatly enhance the distribution of research findings.

8. Ultimate goal(s) of this Program

Provide healthy alternative food sources for better human health and nutrition for the target population through food intervention in the prevention of commonly occurred physiological diseases

9. Scope of Program

- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.1	0.0	2.1
2008	0.0	0.1	0.0	2.1
2009	0.0	0.1	0.0	2.1
2010	0.0	0.1	0.0	2.1
2011	0.0	0.1	0.0	2.1

Outputs for the Program

13. Activity (What will be done?)

Planning meetings of the stakeholders and collaborating agencies will be conducted. Field experiments will be conducted on promising varieties/lines of specialty herbs, spices, and vegetables. Pure lines of green and white bitter melons will be developed through tissue culture and Micropropagation for chemical profiles of the two types. Phytochemical screening of hot pepper and leafy Ipomoea lines/varieties for bioactive and functional compounds will be conducted. Laboratory experiments will be conducted for recipe development and protection of processed foods against microbial contaminations. Taste testing and food intake studies with elderly minorities will be conducted followed by demonstration trials.

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

Extension	
Direct Methods	Indirect Methods
• Workshop • Group Discussion • Demonstrations	• Newsletters • TV Media Programs

15. Description of targeted audience

Our targeted audiences will be leaders in the agricultural, academic and local communities including small farmers and home gardeners. Food scientists, health activists, and nutritionists will also be addressed.

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	15	45	0	0
2008	25	50	0	0
2009	50	100	20	50
2010	50	200	40	100
2011	50	2000	50	100

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

# of research publications; # of promising crop lines identified; # of successful food preparations
2007 1 publication
2008 1 publication + 3 crop lines identified
2009 2 publications + 5 crop lines identified + 3 recipes developed
2010 2 publications + 5 crop lines confirmed + 5 recipes developed
2011 3 publications + 5 crop lines confirmed + 6 successful food prparations confirmed

2007: 1 2008: 4 2009: 10 2010: 12 2011: 14

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target
# of people have knowledge about the new/improved recipes

Outcome Type: Short

2007: 0 2008: 20 2009: 40 2010: 50 2011: 100

Outcome Target
# of people accept/like the new food preparations

Outcome Type: Medium

2007: 0 2008: 0 2009: 20 2010: 50 2011: 100

Outcome Target
# of people adopted the new foods in their daily diets

Outcome Type: Long

2007: 0 2008: 0 2009: 0 2010: 0 2011: 20

20. External factors which may affect outcomes

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

Description

Unpredictable extremes of conditions such as drought, flooding, or insect infestation may cause damage to the field trials and loss of valuable germplasm. Funding limitations and changed policies and research priorities may affect the program and its outcome, and thus program implementation may not be possible. Moreover, if the participants are not skilled and wholehearted, desired success of the program may not be achieved.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description

We will have a preliminary assessment of manpower, technical skills, and program expectations by an ad hoc committee consisting of the faculty PIs, collaborating partners, and other stakeholder members. An annual evaluation report will be prepared that will be reviewed at the subsequent evaluation meetings. In the midway of the program, the number of field or greenhouse experiments completed and the phytochemical analyses done will indicate progress. Taste testing and recipe demonstration results will be another indicator of the progress. Finally at the end, the number of research publications, number of successful recipes developed and tested, and the stakeholders' satisfaction will assess the total outcome.

22. Data Collection Methods

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

Description

Structured samples of the cross sections of the target populations will be drawn in a symposium and food show to gather information on the acceptance and comments from the taste panels, community leaders, and stakeholders. An on-the-spot survey will be conducted at the end of the symposium.

1. Name of the Planned Program

Horticulture Production

2. Program knowledge areas

- 203 100% Plant Biological Efficiency and Abiotic Stresses 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

The Cooperative Extension Horticulture program provide Arkansas farmers with quality educational out-reach services including production information, coordination, and management of fruits and vegetable enterprises. The program conducts on-farm research trials to determine the adaptation of new production methodologies and fruit and vegetable varieties ideal for small-scale and limited-resource farmers. The program also sets up on-farm demonstration plots to address the production constraints, under various production zones, and promote the use of environmentally friendly cultural practices that lower production cost and increase returns on investment. Production of fruits and vegetable crops offer economic alternatives for the small-scale and limited resource farmers. Today's markets and consumer preferences continue to demand increasingly diverse types of fruits and vegetables. Information on many of these crops is greatly lacking or not accessible to limited resource farmers. The horticulture program plans to continue pursuing the following goals; 1) Enhance horticultural crop production by small-scale and limited resource farmers, and 2) Enhance economic opportunity and quality of life for limited resource farmers.

6. Situation and priorities

There are over 5,000 small farms in Southeast and Southwest Arkansas. Most of these farms are owned by minority and limited resource farmers. Additionary, over 87% of the farmers in the region are small-scale (with less than $250,000 in farm sales per year). These farms face a great challenge in producing row crops. Use of horticultural crops to diversify their farm enterprise and increase production profits is necessary. Southeast Arkansas, especially Jefferson county, has a growing number of retired and retiring professionals, many of whom are turning into small plot vegetable gardening. There is also a growing number of Master Gardeners in each State. They are working with county agents and establishing and supporting community gardens. The horticulture program needs to continue to support these efforts. Community gardens play a key role in inspiring low income families to grow horticultural crops and improve the nutritional level of families and expand family and producer income.

7. Assumptions made for the Program

Horticulture is a viable means of improving income and sustainability of small farms. Production of horticultural crops can improve the nutritional level of families and expand family and producer income. Home gardening provide therapy to the aging population.

8. Ultimate goal(s) of this Program

The ultimate goals of horticulture program are to; 1) to increase horticultural crop production by small-scale and limited resource farmers, and 2) to increase economic opportunity and quality of life for limited resource farmers by improving their farm profitability.

9. Scope of Program

- In-State Extension
- In-State Research
- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	1.7	0.0	0.0
2008	0.0	1.7	0.0	0.0
2009	0.0	1.7	0.0	0.0
2010	0.0	1.7	0.0	0.0
2011	0.0	1.7	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

1) Conduct training for county extension staff, master gardeners, small-scale and limited resource farmers, and 4-H club members, 2) write monthly news columns/articles on various production issues on small fruits and vegetables, 3) develop and review horticultural crops publications/factsheets, and 4) conduct farm visits.

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	• Newsletters • Web sites

15. Description of targeted audience

The target audience is the small and limited resource farmers. Many of these individuals lack adequate economic, technical or social resources to maintain viable operations on row-crops. Horticultural crop production will help these farmers increase farm profitability and economic status.

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	100	150	10	20
2008	125	200	15	25
2009	150	200	20	30
2010	175	200	25	40
2011	200	200	30	50

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

1) Conduct training of county extension staff, master gardeners, limited resource farmers and 4-H club members, 2) write monthly news columns/articles addressing gardening trends and concerns, and 3) continue reviewing and developing publications/factsheets

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Develop monthly columns/articles addressing production trends and concerns

Outcome Type: Short

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

20. External factors which may affect outcomes

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

Description

Outcomes will be dependent on the support and cooperation from: 1) the University of Arkansas Cooperative Extension Service, 2) County Extension Offices, 3) the University of Arkansas at Pine Bluff research and extension faculty and staff, and farm maintenance crew, 4) Arkansas school systems, and 5) 4-H and other youth organizations.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description

The horticulture program will be reviewed annually and results used to adjust or modify the following year's activities. The review will include, but is not limited to, participation of small-scale and limited resource farmers, and the number of small farms that use horticultural crops to diversify their farm enterprise and family income status. Parameters to determine program success will include increased participation in small farm horticultural crops production, increase in households involved in home gardening, and increase in number of families participating in farmers' markets selling home-grown produce.

22. Data Collection Methods

- Mail
- On-Site
- Unstructured
- Observation
- Portfolio Reviews

Description

Informational data will be collected from the stakeholders through surveys, informal interviews and field observations.

1. Name of the Planned Program

Human nutrition

2. Program knowledge areas

- 703 50% Nutrition Education and Behavior
- 702 50% Requirements and Function of Nutrients and Other Food Components

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

4. Program duration : Medium Term (One to five years)

5. Brief summary about Planned Program

We will conduct an acceptability study of dairy products to include low fat calcium-dense milk, cheese, and yogurts in children 9-12 years old in the middle school. The most acceptable products in each group for their flavors for this age group will be promoted among the children using peer promotion, pamphlets, and the University of Arkansas at Pine Bluff radio and television programs. Students at UAPB (Juniors) enrolled in the Community Nutrition Class, under the guidance of the principal investigator, will conduct a formative study with the target audience to develop the study name, logo(s) and nutritional messages. Also, they will develop strategies for peer promotion. These students, as part of their main assignment in the class, will train the peer promotion leaders and evaluate their effectiveness during the study. This pilot study can be used as a model to promote the consumption of low fat dairy products among children in Southeast Arkansas. Good results from this research can be used by school administrators to include the most acceptable and healthy low fat calcium-dense milk, cheese, and yogurts in the school meal menus of children 9-12 years old. This program will include the following goals: 1. Increase the awareness and the knowledge of the benefits of low-fat dairy products in school children 9-12 years old in Pine Bluff middle schools in 2007 and 2008 2. Increase the consumption of low-fat dairy products among school children 9-12 years old in the Pine Bluff middle schools in 2009 and 2010 3. To consult with heads of school cafeteria to include in the menu the most acceptable low-fat dairy products in 2011

6. Situation and priorities

Nutrition education in elementary school is advisable as the early adolescent years are formative years when teens develop health habits. The NIH consensus panel stated in 2000 that only 25% of boys and 10% of girls met the recommended servings of dairy products equivalent to 1,300 mg of calcium intakes per day (NIH, 2000). Research conducted in the Lower Mississippi Delta have documented that 87% of Expanded Food and Nutrition Education Program (EFNEP) participants in Arkansas and Mississippi consume less than two servings daily of dairy foods, resulting in low calcium intake (Mississippi State University, 1995). About 80% of participants in all Arkansas and Mississippi counties reported calcium intake to be less than 70% of the RDA. Study (Ludwig, D. et al, 2001) has shown that excess consumption of sugar-sweetened drinks increases the likelihood of childhood obesity. On the other hand, Zemel (1999) found that consumption of lowfat dairy foods helps control body fat and reduce the risk of obesity.

7. Assumptions made for the Program

1. The increased consumption of low fat dairy products will increase the intake of calcium in children 9-12 years old 2. The increased consumption of low fat dairy products will help control body fat in children 9-12 years old 3. The increased consumption of low fat dairy products will reduce the risk of obesity in children 9-12 years old

8. Ultimate goal(s) of this Program

1.Increase the awareness and the knowledge of the benefits of low-fat dairy products in school children 9-12 years old in Pine Bluff middle schools in 2007 and 2008 2.Increase the consumption of low-fat dairy products among school children 9-12 years old in the Pine Bluff middle schools in 2009 and 2010 3.To consult with heads of school cafeteria to include in the menu the most acceptable low-fat dairy products in 2011

9. Scope of Program

- In-State Extension
- In-State Research

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.0	0.0	0.9
2008	0.0	0.0	0.0	0.9
2009	0.0	0.0	0.0	0.9
2010	0.0	0.0	0.0	0.9
2011	0.0	0.0	0.0	0.9

Outputs for the Program

13. Activity (What will be done?)

- Ads in schools - Questionnaires - Lectures - Peer leadership mentoring - Flyers in classrooms - Media announcements - Sampling of low dairy products - Shopping training - Acceptability study - Workshops on low fat dairy products

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

Extension	
Direct Methods	Indirect Methods
• Education Class • Workshop • Demonstrations	• Public Service Announcement • TV Media Programs

15. Description of targeted audience

This study will be conducted in Elementary schools in Pine Bluff. In each school, one classroom from fourth grade to seventh grade will be selected for this study. We expect to have as many female as male students aged from 9 to 12 years old. Eligible students for the study will be required to have consent forms signed by their parents. The consent form will inform parents that their child will be asked to participate in additional curriculum activities to increase their intake of low fat dairy products and will be asked to complete surveys and 24-hour food recalls interview during the regular school day. Parents as well as students will be free to refuse their participation in the study.

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	50	50	50	250
2008	100	100	100	500
2009	100	100	100	500
2010	100	100	100	500
2011	100	100	100	500

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 classes per month, number of shopping workshops, number of tasting workshops, and number of recipe demonstrations.

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Attitudes, Opinions, Awareness, knowledge, education, behavior, increased consumption of low fat dairy products, reduced Body Mass Index (BMI), increased Bone density, improvement of foods offered at home and in schools, health.

Outcome Type: Medium

2007: 50 2008: 100 2009: 150 2010: 150 2011: 150

20. External factors which may affect outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Appropriations changes
- Government Regulations
- Other (Parents, School policies)

Description

Refusal for parents to have their children to participate. The degree of parents involvement in the program can affect success of the program at home and in school. School not allowing enough time for extracurricular activities. In this case, suggestions can be made for sessions to be taught as part of the curriculum for classes such as nutrition education, health, or science. Another factor that may affect outcomes will be the unwillingness of schools to change their menus.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

Description

24-hour recall surveys will be conducted to evaluate pre-and post-consumption of low fat dairy products. Also, surveys will be conducted to evaluate the knowledge and attitudes of the participants toward the nutritional qualities and the benefits of consuming low fat dairy products. In addition, surveys will be used to find out the changes in foods offered at home adn in school during the study.

22. Data Collection Methods

- Whole population
- On-Site

Description

A trained interviewer will ask a sample of students in selected schools to recall in detail the foods and drinks consumed the previous 24 hours. Models of food servings will be used to help responders to recall accurate amounts of foods consumed. The list of foods consumed will be analyzed using a computer diet analysis program to determine the energy intake, the amounts of dairy products consumed, the amounts of total fats, saturated fats, calcium, and vitamin D consumed prior to the study. BMI will be assessed using the respondents'' height and weight. After the study, another 24 hour- recall of food consumed and BMI will be conducted and comparison will be made between the treatment group made of 9-12 years old students involved in the program and the control group made of 9-12 years old students who will not participate in the program. A survey-instrument consisting of questions related to knowledge, attitudes, consumption of low dairy products, and parent involvement in their children food choices will be developed by the research team. The content validity and reliability of the questionnaire will be tested. Also, the instrument will be subject to approval by the UAPB human subjects committee to ensure compliance with informed consent and confidentiality of the respondents. There will sessions to explain the survey to participants. The survey will be administered before and after the program. Comparison will be made between the treatment and the control groups.

1. Name of the Planned Program

Improved Management Options to Improve Catfish Production Efficiencies and Lower Costs

2. Program knowledge areas

- 603 10% Market Economics
- 302 20% Nutrient Utilization in Animals
- 601 15% Economics of Agricultural Production and Farm Management
- 308 20% Improved Animal Products (Before Harvest)
- 602 15% Business Management, Finance, and Taxation
- 307 20% Animal Management Systems

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

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

5. Brief summary about Planned Program

Rigorous comparison of performance of hybrids with channel catfish and pond evaluation of feeding strategies are priorities. New enterprise budgets and cash flow budgets are needed for accurate farm planning. Accurate assessment of fish farm inventories are needed. The cost effectiveness of copper sulfate for off flavor control will be demonstrated. Effects of aerator placement on pond water circulation will be demonstrated. Priority areas include improved understanding of consumer preferences for various attributes of farm-raised catfish. Enhanced understanding of the role of packaging will result in improved grocery store sales. Producers are interested in novel diet ingredients and feeding strategies.

6. Situation and priorities

Catfish is the leading segment of U.S. aquaculture, contributing over 46% of the value of aquaculture production in the United States. Arkansas is the second leading catfish-producing state in the U.S. The U.S. catfish industry has struggled through several years of low prices and severe cash flow problems. The very low prices and extended recovery period have been attributed to a series of factors, including increasing quantities of lower-priced imports of basa/tra (Pangasius sp.) from Vietnam. Productivity gains will reduce costs through improved management. Rigorous comparison of performance of hybrids with channel catfish, and pond evaluation of feeding strategies are priorities. New farm budgets and cash flow budgets are needed for accurate farm planning. The catfish industry in Southeast Arkansas is undergoing trying times. Cheaper products from Viet Nam are often mislabeled and sold for a cheaper cost. This is causing producers' to lose their market share. To maintain profitability is important to catfish producers to operate farms as efficiently as possible. This will require improved enterprise budgets and accurate assessment of producer fish inventories. At any time in the summer months over 80% of ponds are considered off flavor and unable to be marketed. To compound the problem, only two products are legally approved for use to control off flavor. Products are Karmex, which is only approved by the EPA on an emergency use basis and could be made illegal at any time, and copper sulfate, which has been used legally for many years for algal control. Electric paddlewheel aerators are used in commercial aquaculture ponds to provide emergency aeration in case of low dissolved oxygen events. In studies in small research ponds, aerator placement had a large effect on the circulation of water within the ponds.
Differentiation of catfish products to market higher-valued products forms to those segments of the market willing to pay for the specific attributes that are different and unique will result in higher prices and profits on U.S. catfish farms.
Enhanced understanding of the role of packaging will result in improved grocery store sales. Commercial production of channel catfish is relatively inefficient. Feed accounts for up to 50% of production costs. Producers are interested in novel diet ingredients and feeding strategies that can improve the profitability of their industries. Human consumers are interested in products that taste good and are beneficial for health. New diet ingredients and feeding strategies must be tested in different species under controlled conditions to provide a scientific foundation for changing existing diet formulations and feeding strategies.
Priority areas include development of improved management recommendations for stocking, grading, and harvesting catfish and improved understanding of consumer preferences for various attributes of farmed catfish.

7. Assumptions made for the Program

New management technologies can be utilized to improve pond performance efficiency. Farmers will have the cash flow needed to implement the recommended management changes. Demand for catfish increases slightly each year. That the cheaper imports do not take to much of the current market. Improved farm efficiency increases farm profitability. Off flavor will continue to be a problem plaguing the catfish industry. EPA regulatory status for copper sulfate remains as it is currently. That low dissolved oxygen events are best remedied by the more efficient water circulation.

U.S. consumers are sufficiently discriminating so as to be willing to pay more for differentiated catfish products that exhibit specific and desirable characteristics.
Grocery stores will be willing to test new packaging materials and products. The efficiency and profitability of catfish can be improvd through changes in diet and feeding strategies.

8. Ultimate goal(s) of this Program

Increased efficiency of catfish food-fish production, reduced costs of production and economic viability for the catfish industry, are the ultimate goals of this program.

9. Scope of Program

- In-State Extension
- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.8	0.0	0.7
2008	0.0	0.8	0.0	0.7
2009	0.0	0.8	0.0	0.7
2010	0.0	0.8	0.0	0.7
2011	0.0	0.8	0.0	0.7

Outputs for the Program

13. Activity (What will be done?)

•Conduct field trials •Conduct method demonstrations •Publish results •Give presentations •Develop individual enterprise budgets for catfish producers •Develop news articles on improving farm efficiency •Develop producer workshop targeting efficiency improvements for producers •Work with catfish industry to develop copper sulfate use protocol •Work with fish processing plants in valuing use of copper sulfate for off flavor control. •Work with industry supplies who manufacture copper sulfate on proper use of the product
Initially, a suite of alternative diet ingredients will be screened in pilot studies for potential efficacy in full studies.

1. Candidates for alternative protein sources are cuphea meal, soybean concentrates, poultry meals, and invertebrate meal.
2. Candidates for lipid sources are non-fish sources of n-3 fatty acids such as canola, flaxseed oil, and algal concentrates.
3. Prebiotics and probiotics may include GrobioticTM, DailyTM, and Bacillus spores.

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

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Other 1 (Field trials and demonstrations)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension publications)

15. Description of targeted audience

Catfish farmers throughout Arkansas
County Extension agents
Grocery store managers
Consumers

Commercial catfish producers

Interested potential producers

Commercial Bankers

Copper sulfate manufacturers and suppliers

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	12	100	0	0
2008	13	100	0	0
2009	16	100	0	0
2010	16	100	0	0
2011	16	100	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 of Refereed Journal Articles

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

Output Target

Number of Abstracts Published

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

Output Target

Number of Presentations at Scientific Meetings

2007: 7 2008: 7 2009: 7 2010: 7 2011: 7

Output Target

Number of Trade Magazine Articles

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

Output Target

Number of Catfish Farms Adopting Recommendations

2007: 90 2008: 92 2009: 94 2010: 97 2011: 100

Output Target

Number of Catfish Acres Using Recommendations

2007: 16000 2008: 16200 2009: 16400 2010: 16700 2011: 17000

Output Target

Number of Ponds in Copper Sulfate Demonstrations

2007: 5 2008: 7 2009: 10 2010: 15 2011: 18

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of Farmers Gaining Access to Catfish Market Information

Outcome Type: Short

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

Outcome Target

Number of Stores Adopting Recommendations

Outcome Type: Medium

2007: 1 2008: 2 2009: 4 2010: 4 2011: 4

Outcome Target

Number of Stores Increasing Sales of Catfish

Outcome Type: Long

2007: 0 2008: 2 2009: 2 2010: 4 2011: 4

Outcome Target

Number of Arkansans Gaining Access to Catfish Management Information

Outcome Type: Short

2007: 45 2008: 50 2009: 50 2010: 50 2011: 50

Outcome Target
Number of Arkansans Adopting Management Recommendations

Outcome Type: Medium

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

Outcome Target
Number of Arkansans Increasing Efficiency, Profitability Through Improved Catfish Management

Outcome Type: Long

2007:	4	2008:	8	2009:	20	2010:	5	2011:	5

Outcome Target
Number of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Outcome Type: Long

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

Outcome Target
Number of producers responding to project results

Outcome Type: Short

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

Outcome Target
Number of producers willing to test successful ingredients or feeding strategies on a commercial scale

Outcome Type: Medium

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

Outcome Target
Percent of CFAR members aware of effect aerator placement has on circulation

Outcome Type: Long

2007:	20	2008:	30	2009:	40	2010:	50	2011:	60

Outcome Target
Number of commercial pond owners informed of the options to improve water circulation through aerator placement

Outcome Type: Short

2007:	1	2008:	2	2009:	2	2010:	4	2011:	5

Outcome Target
Number of farm managers considering increased pond circulation in the placement of new aerators

Outcome Type: Short

2007:	1	2008:	2	2009:	2	2010:	4	2011:	5

20. External factors which may affect outcomes

- Other ()

Description
Changing market demands for aqua-cultured products, new disease or other production barrier, and public acceptance of recommendations. Global economic situation changes, regulatory laws chagne. Changes in EPA regulations. Costs and feasibility of moving aerators and power cords.

Production barriers, Public acceptance of recommendations
Factors affecting overall profitability of fish culture that may have nothing to do with diet or feeding strategies:
1. Fuel costs
2. Weather
3. Competition from domestic and imported products
4. Unfavorable publicity

21. Evaluation studies planned

- During (during program)

Description

{NO DATA ENTERED}

22. Data Collection Methods

- Sampling
- Case Study
- Observation
- Tests

Description

{NO DATA ENTERED}

1. Name of the Planned Program

Improving Disease Status for Baitfish Production and Marketing

2. Program knowledge areas

- 312 25% External Parasites and Pests of Animals
- 313 25% Internal Parasites in Animals
- 311 50% Animal Diseases

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

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

5. Brief summary about Planned Program

Diseases and parasites of baitfish species are a major source of losses on baitfish farms. This program will develop new diagnostic tools, provide timely and accurate diagnoses and treatment recommendations to baitfish producers. Special attention will be given to biosecurity initiatives to prevent infections.

6. Situation and priorities

Baitfish diseases impact fish survival and restrict market opportunities. To maintain profitability and access to markets, it is critical for these industries to understand and eradicate important diseases and to demonstrate specific disease free status to trading partners. Priorities • To improve detection methods for important diseases • To improve farm biosecurity and disease prevention • To eradicate diseases of regulatory of fish health concern • To help farmers demonstrate pathogen free status to improve marketing opportunities.

7. Assumptions made for the Program

That industry will continue to feel that certification of disease status is a beneficial marketing tool. That industry will agree attributes are needed for certification. That we will be able to establish and maintain the desired disease status.

8. Ultimate goal(s) of this Program

National recognition of the safety of Arkansas baitfish, reduced disease-related trade restrictions, and a reduction on reliance upon wild caught baitfish.

9. Scope of Program

- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	1.2	0.0	0.3
2008	0.0	1.2	0.0	0.3
2009	0.0	1.2	0.0	0.3
2010	0.0	1.2	0.0	0.3
2011	0.0	1.2	0.0	0.3

Outputs for the Program

13. Activity (What will be done?)

Research will be conducted to • Improve diagnostic tests for important pathogens (viral, parasitic, and bacterial) • Improve understanding of the epidemiology of important pathogens • Discover new pathogens responsible for fish losses • Improve methods to eradicate pathogens from afflicted farms.

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

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Other 1 (Educational meetings) • Other 2 (Farm demonstrations)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

Commercial baitfish producers.

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	40	60	0	0
2008	40	60	0	0
2009	40	60	0	0
2010	40	60	0	0
2011	40	60	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 of publications

2007: 9 2008: 7 2009: 7 2010: 0 2011: 0

Output Target

Number of presentations

2007: 3 2008: 3 2009: 3 2010: 0 2011: 0

Output Target

Number of experiments and field trials of treatments for fish parasite and parasite vectors conducted on farms

2007: 4	2008: 0	2009: 0	2010: 0	2011: 0

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target
Percent of Arkansas bait and ornamental fish production farms participating in the State certification program

Outcome Type: Short

2007: 0	2008: 50	2009: 50	2010: 75	2011: 75

Outcome Target
Number of farms that have attempted eradication procedures

Outcome Type: Short

2007: 0	2008: 0	2009: 0	2010: 10	2011: 10

20. External factors which may affect outcomes

- Other ()

Description
Statutory changes in state, federal, and international fish health regulations

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description
A comprehensive evaluation of our fish health program is planned for 2009-2010.

22. Data Collection Methods

- Sampling
- On-Site

Description
An IMPLAN based analysis of the fish health program is planned.

1. Name of the Planned Program

Improving Hatchery Production Efficiency

2. Program knowledge areas

- 301 80% Reproductive Performance of Animals
- 307 20% Animal Management Systems

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

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

5. Brief summary about Planned Program

Arkansas leads the nation in hatchery production. There is little research support for hatchery businesses. This program will develop research and extension projects related to catfish, baitfish, hybrid striped bass, and sportfish species.

6. Situation and priorities

Decreasing profit margins on catfish production facilities and recent research advances have re-kindled interest in the production of channel x blue catfish hybrids for food-fish production. Hybrids have been shown to grow faster and survive better than channel catfish, but large-scale production of hybrid finderlings remains problematic. Techniques for utilizing ultrasound technology for selecting females and staging eggs, cryo-preservaion of blue catfish sperm, and the use of geothermal water for out-of-season spawning will be investigated and refined in order to improve production efficiencies of hybrid production. The US runs an $8 billion annual trade deficit for edible seafood. Production of hybrid striped bass could reduce this trade deficit. The hybrid striped bass industry must become more productive and efficient to help reduce the trade deficit. Hybrid striped bass fingerling producers and grow-out facilities would benefit from improved management techniques. Priorities –UAPB has been conducting research on hybrid striped bass fingerling culture for more than a decade. Tank culture of hybrid striped bass offers great potential for increasing production. Fingerling producers would like to move away from pond production in the spring toward tank production year-round.

7. Assumptions made for the Program

New technologies can be utilized to improve hybrid production efficiencies, hatchery managers are capable of learning hybrid production techniques, food-fish producers will value a genetically superior fingerling. Specific strains or stocks of white and striped bass will be available to producers and researchers. Some subset of those strains will be most appropriate for tank culture If hybrid striped bass fingerling producers see that techniques are established, they will increase tank production and increase production out of season.

8. Ultimate goal(s) of this Program

Increase efficiency of catfish food-fish production, increae the number of catish fingerling operations producing hybrids, and year-round fingerling production in tanks throughout the industry.

9. Scope of Program

- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.4	0.0	0.2
2008	0.0	0.4	0.0	0.2
2009	0.0	0.4	0.0	0.2
2010	0.0	0.4	0.0	0.2
2011	0.0	0.4	0.0	0.2

Outputs for the Program

13. Activity (What will be done?)

•Conduct field trials •Conduct method demonstrations •Publish results •Give presentations 1. Conduct research to determine the relationship between egg size and size at hatch for hybrid striped bass. 2. Conduct research to re-defined the relation between temperature and egg stage duration. 3. Conduct research to determine ways of reducing cannibalism in tank culture of hybrid striped bass 4. Partner with Keo Fish Farm, Inc. to acquire seed stock from specific males and females

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

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Other 1 (Educational meetings)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

•Catfish farmers throughout Arkansas •County Extension agents Hybrid striped bass fingerling producers Hybrid striped bass grow-out facility operators

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	4	50	0	0
2008	8	50	0	0
2009	5	50	0	0
2010	5	50	0	0
2011	0	50	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 of Abstracts

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

Output Target
Number of Presentations

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

Output Target
Number of Refereed Journal Articles

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

Output Target
Number of Popular Articles and Newsletter Articles

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target
Number of Fingerling Producers That Learned What We Know

Outcome Type: Short

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

Outcome Target
Number of Scientists That Learned What We Know

Outcome Type: Short

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

Outcome Target
Number of Finglerling Producers That Use What We Know

Outcome Type: Medium

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

Outcome Target
Number of Grow-out Operations That Use What We Know

Outcome Type: Medium

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

Outcome Target
Percent of Increase in Hybrid Striped Bass Fingerlings Produced in Arkansas

Outcome Type: Long

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

Outcome Target
Percent Increase in Hybrid Striped Bass Fingerlings Produced in Tanks

Outcome Type: Long

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

Outcome Target
Number of Arkansans Gaining Access to Hybrid Catfish Information

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
45	50	50	50	50

Outcome Target
Number of Arkansans Adopting Hybrid Catfish Production

Outcome Type: Medium

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

Outcome Target
Number of Arkansans Increasing Efficiency, Profitability Through Hybrid Catfish Production

Outcome Type: Long

2007:	2008:	2009:	2010:	2011:
4	8	20	5	5

20. External factors which may affect outcomes

- Other ()

Description
•Changing market demands for aqua-cultured products. •New disease or other production barrier •Public acceptance of recommendations •Natural disasters •Economy •Competing public priorities •Population changes.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description
{NO DATA ENTERED}

22. Data Collection Methods

- Sampling
- Case Study
- Observation

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Improving Largemouth Bass Fishing in the Arkansas River

2. Program knowledge areas

- 134 100% Outdoor Recreation

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

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

5. Brief summary about Planned Program

This program will assess the largemouth bass population in the Arkansas River to answer critical questions of our fisheries management stakeholder, The Arkansas Game and Fish Commission.

6. Situation and priorities

In recent years, the Arkansas Game and Fish Commission (AGFC) has been fielding concerns that the quality of the largemouth bass fishery has declined significantly in the lower Arkansas River over the last decade. AGFC has little fisheries data collected from the river, especially outside of Lake Dardanelle. AGFC desired a comprehensive stock assessment of largemouth bass in the different pools of the lower Arkansas River. The Arkansas Game and Fish Commission would like to assess and improve the largemouth bass populations in the Arkansas River. The status of the largemouth bass population in the river was brought to the attention of the AGFC by recreational and tournament bass anglers. We have the expertise and resources to help the AGFC with assessment, to suggest methods for improvement of the largemouth bass population, and to monitor the effects of management decisions. Priorities - The Arkansas Game and Fish Commission would like to determine whether hatchery-reared fingerlings stocked into pools of the Arkansas River replace or supplement wild produced largemouth bass fingerlings. We have assessed contribution of stocked largemouth bass fingerlings to year classes in the Arkansas River in previous research. We can design and execute research that would indicate the possible effects of stocked fingerlings on the wild population. Arkansas Game and Fish Commission (AGFC) has been collecting fish samples from rotenone samplings across the pools of Arkansas rivers and lakes since 1971. The long term data sets can provide quantitative measures on fish abundance in the habitats. However, the data has not been closely examined or analyzed for scientific research and fisheries management. It’s partly due to a negative perception about the reliability of rotenone data. The proposed study will be the first attempt to make careful examinations of the Arkansas rotenone data set for checking the variability of data as well as the comparison with electrofishing data for black bass species in some matched areas. Owing to longterm collection of data, it would be possible to assess the temporal pattern of fish populations in Arkansas. • Assessment of the variability of rotenone data for major sport fish species in selected Arkansas water bodies to examine the reliability of data for scientific researches. • Comparison between rotenone data and electrofishing data for black bass species for the effectiveness of different sampling methods. • Assess the long-term pattern of fish populations and its relationship with external environmental factors.

7. Assumptions made for the Program

• It is not a foregone conclusion that the Arkansas River largemouth bass population needs management as the “decline” is not universally accepted by all AGFC scientists • But in the absence of any supporting data, a comprehensive baseline stock assessment is warranted • Any management recommendations from this research are subject to intra-agency approval and adoption by AGFC A research project will be able to determine whether stocked fish supplement the wild population. The Arkansas Game and Fish Commission will stock fish if it can be demonstrated that stocked fish supplement wild largemouth bass. Stocking largemouth bass will enhance recreational fishing in the Delta. It is assumed that rotenone samples are consistent and unbiased representations of fish populations in the region.

8. Ultimate goal(s) of this Program

• To provide a quantitative stock assessment of largemouth bass fisheries throughout the lower Arkansas River (eleven different pools, 300 river miles). •To provide baseline research to support future management of largemouth bass in the lower Arkansas River should it be warranted. •As a supplement, we also included spotted bass in assessments. •Enhance the angling experience of recreational anglers in the Delta. •Fisheries scientists would be aware of the potential use of rotenone data to answer the fisheries management issues. •The study results provide guidelines for fisheries management decision makers in the region.

9. Scope of Program

- In-State Research

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.0	0.0	1.3
2008	0.0	0.0	0.0	1.3
2009	0.0	0.0	0.0	1.3
2010	0.0	0.0	0.0	1.3
2011	0.0	0.0	0.0	1.3

Outputs for the Program

13. Activity (What will be done?)

• Field collections of Arkansas River black basses from eleven pools during spring and fall seasons in 2004 and 2005 • Laboratory fish processing from 2004 through 2006 • Laboratory fish aging from 2004 through 2006 • Data analysis from 2005 through 2006 that include calculations of bass abundance, mortality, age structure, growth, and reproductive success. Conduct research to determine abundance of wild largemouth bass fingerlings in coves prior to stocking. We will randomly stock half of 10 coves. We will assess abundance of wild largemouth bass post stocking and compare mortality rates of largemouth bass fingerlings in stocked and unstocked coves. Conduct research to address the question of largemouth bass production in the Arkansas River and whether production has changed over time. We are also developing an approach to be able to compare production of bass among large USACE reservoirs, natural lakes, and pools of the Arkansas River. • Data examination and screening • Conduct statistical analyses for the study objectives.

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

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Other 1 (PowerPoint Presentations)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

•Fisheries managers of Arkansas The Arkansas Game and Fish Commission, Tournament largemouth bass anglers, Recreational anglers of Arkansas • AGFC fisheries biologists • AGFC fisheries managers.

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	0	0	0	0
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	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 of Abstracts

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

Output Target

Number of Presentations

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

Output Target

Number of Refereed Journal Articles

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

Output Target

Number of Research Reports Submitted to Stakeholders

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

Output Target

Number of Non-peer Reviewed Publications

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

Output Target

Number of Peer Reviewed Publications

2007: 2 2008: 1 2009: 1 2010: 1 2011: 0

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target
The percent of AGFC fisheries biologists and managers that are informed about use of rotenone samples for scientific research topics through scientific meetings and conferences

Outcome Type: Short

2007:	2008:	2009:	2010:	2011:
60	80	100	120	130

Outcome Target
Percent of AGFC fisheries biologists and managers who use the study results to solve management issues

Outcome Type: Medium

2007:	2008:	2009:	2010:	2011:
17	27	37	47	57

Outcome Target
Number of tournament largemouth bass anglers that learned what we know

Outcome Type: Short

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

Outcome Target
Number of recreational anglers that learned what we know

Outcome Type: Short

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

Outcome Target
Number of non-agency fisheries biologists that use what we know

Outcome Type: Medium

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

Outcome Target
Percent reduction in complaints to the AGFC regarding largemouth bass in the Arkansas River

Outcome Type: Long

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

Outcome Target
Percent increase in largemouth bass tournaments on the Arkansas River

Outcome Type: Long

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

Outcome Target
Number of AGFC personnel that learned what we know

Outcome Type: Short

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

Outcome Target
Number of non-agency fisheries biologists that learned what we know

Outcome Type: Short

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

Outcome Target
Number of AGFC personnel that use what we know

Outcome Type: Short

2007:	7	2008:	7	2009:	7	2010:	7	2011:	7

20. External factors which may affect outcomes

- Other ()

Description
•Political, public relations, and economic factors are involved in almost any management adopted by AGFC (our primary stakeholder) •If AGFC research priorities change in the next few years, medium-term and long-term outcomes listed above could change also •Funding availability .Natural disasters .Economy .Public policy .Government Regulations .Competing Public Priorities •The rotenone sample collection has been conducted in a consistent manner to avoid any sampling bias. •AGFC scientists and managers will be willing to continue to share the rotenone data and other information even if preliminary analyses indicate negative results about the rotenone data quality and rotenone sampling method. •Fisheries managers have to consider other socioeconomic factors in the process of determination of fisheries management plans. Thus the study results would not effectively influence the fisheries management decision makings, regardless of quality of the research outcomes.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description
{NO DATA ENTERED}

22. Data Collection Methods

- Sampling
- Case Study
- Observation

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Improving Management Techniques for Baitfish

2. Program knowledge areas

- 308 10% Improved Animal Products (Before Harvest)
- 307 45% Animal Management Systems
- 302 45% Nutrient Utilization in Animals

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

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

5. Brief summary about Planned Program

Arkansas leads the nation in baitfish production,one of the top five segments of U.S. aquaculture. This program is designed to improve profitability through improving management and production efficiencies through improved larval rearing, pond preparation, stocking, and feeding recommendations.

6. Situation and priorities

Commercial production of rosy red fathead minnows in outdoor ponds is problematic due to poor survival. Based on their success in tank hatching eggs of other species, producers are interested in a similar system for fathead minnows. Priorities include improving the efficiency of fathead minnow egg collection and removal, and developing improved diets.

7. Assumptions made for the Program

That cost effective methods for commercial fathead minnow production can be developed based upon this research and that markets are not constrained by regulations affecting the interstate shipment of live fish.

8. Ultimate goal(s) of this Program

Reduce costs of producing farm-raised minnows.

9. Scope of Program

- In-State Research

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.5	0.0	0.5
2008	0.0	0.5	0.0	0.5
2009	0.0	0.5	0.0	0.5
2010	0.0	0.5	0.0	0.5
2011	0.0	0.5	0.0	0.5

Outputs for the Program

13. Activity (What will be done?)

A series of studies are being conducted on the components of an egg collection, removal and incubation system, and on new feed ingredients and strategies for feeding baitfish. Outputs will include a presentation, a popular article and journal articles. Year 1. Journal article, popular article, abstract, poster presentation. Year 2. Newsletter article Year 3. Abstract, presentation Year 4. Journal article Year 5. Newsletter article

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

Extension	
Direct Methods	**Indirect Methods**
• One-on-One Intervention • Other 1 (PowerPoint Presentations)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

Commercial baitfish producers

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	20	40	0	0
2008	20	40	0	0
2009	20	40	0	0
2010	20	40	0	0
2011	20	40	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 of Peer Reviewed Journal Articles

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

Output Target

Number of Abstracts

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

Output Target

Number of Articles in Producer Trade Magazines

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

Output Target

Number of Fact Sheets and Newsletters

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

Output Target

Number of Presentations

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of producers who learn project results

Outcome Type: Short

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

Outcome Target

Number of producers willing to test successful ingredients or feeding strategies on a commercial scale

Outcome Type: Medium

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

Outcome Target

Percent of baitfish producers (by acreage) adopting diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Outcome Type: Long

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

20. External factors which may affect outcomes

- Other ()

Description

Factors affecting overall profitability of fish cultue that may have nothing to do with diet or feeding strategies: fuel costs, weather, restrictions on interstate transport and sales of baitfish, animal rights movement.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description

{NO DATA ENTERED}

22. Data Collection Methods

- Sampling
- Observation

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Reduce Losses Due to Catfish Diseases

2. Program knowledge areas

- 311 100% Animal Diseases

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

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

5. Brief summary about Planned Program

Losses due to disease are one of the major types of losses in catfish production. This program will develop new diagnostic tools, provide timely and accurate diagnoses and treatment recommendations to catfish production. Specific attention will be given to the increasing problems associated with the exotic trematode. Biosecurity initiatives will seek to move efforts towards prevention of diseases rather than simply responding to disease cases. Four diagnostics laboratories (Pine Bluff, Lonoke, Lake Village, and Newport) will provide disease and water quality diagnostics services. These laboratories diagnose approximately 2,300 cases a year. Information will be disseminated to producers through individual discussions, educational meetings, farm demonstrations, articles in newsletters, and fact sheets.

6. Situation and priorities

The profitability of catfish farming is impacted by reduced fish growth and survival attributable to catfish diseases. Disease losses can account for over $7 million a year in Arkansas. Spread of the catfish trematode has been a growing concern as well as columnaris infections. Biosecurity initiatives are expected to prevent diseases and reduce losses by maintaining fish health. Priorities: 1. To provide swift and accurate diagnosis of diseases, 2. To determine the impact and prevalence of catfish diseases, 3. To concentrate effort on the control and eradication of catfish trematodes, and 4. To promote biosecurity in the catfish industry.

7. Assumptions made for the Program

The estimates of disease losses (USDA/NASS) are accurate. That research showing significant impacts from small numbers of trematodes is correct. That the best management options will continue to be the monitoring and eradication of infested snail populations. That there is an economic incentive for greater biosecurity.

8. Ultimate goal(s) of this Program

Farmers will manage their own pathogen and vector control programs that will effectively prevent losses from catfish trematodes and other diseases.

9. Scope of Program

- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.9	0.0	0.1
2008	0.0	0.9	0.0	0.1
2009	0.0	0.9	0.0	0.1
2010	0.0	0.9	0.0	0.1
2011	0.0	0.9	0.0	0.1

Outputs for the Program

13. Activity (What will be done?)

Research will be conducted to determine the distribution of catfish trematodes and their impact on fish growth and survival and to assess the efficacy of trematode treatment methods. Extension programs will provide catfish disease diagnostic services, conduct field studies of trematode distribution and conduct education programs on trematode control.

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

Extension	
Direct Methods	Indirect Methods
• One-on-One Intervention • Other 1 (Educational meetings) • Other 2 (Farm demonstrations)	• Newsletters • Web sites • Other 1 (Factsheets) • Other 2 (Extension Publications)

15. Description of targeted audience

Commercial catfish producers

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	500	1000	0	0
2008	500	1000	0	0
2009	500	1000	0	0
2010	500	1000	0	0
2011	500	1000	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 of refereed journal articles

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

Output Target

Number of presentations

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

Output Target

Number of trade magazine articles

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

Output Target

Number of abstracts published

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of farmers helped with catfish disease cases

Outcome Type: Short

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

Outcome Target

Number of catfish ponds sampled for trematodes

Outcome Type: Short

2007: 300	2008: 25	2009: 0	2010: 0	2011: 0

Outcome Target

Number of educational meetings conducted to assist farmers with trematode detection and control

Outcome Type: Short

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

20. External factors which may affect outcomes

- Other ()

Description

Statutory changes in the legality of chemical snail control

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description

A comprehensive evaluation of our fish health program is planned for 2009-2010.

22. Data Collection Methods

- Other (Services)

Description

An IMPLAN based analysis of impact of our program is planned

1. Name of the Planned Program

Research Verification

2. Program knowledge areas

- 307 100% Animal Management Systems

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

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

5. Brief summary about Planned Program

Research verification is a critical step in the technology diffusion process for the UAPB Aquaculture/Fisheries Center. Research verification is an extension tool in which research recommendations are implemented on farmer cooperators' ponds. Results are monitored closely and posted on a web site to be readily available. Verification protocols are developed by an interdisciplinary team of researcher and Extension faculty including production, nutrition fish health, water quality, and economist scientists. Farmers are responsible for complying with protocols and providing all necessary inputs; extension and county faculty provide recommendations, monitoring, and data summaries. It allows scientists to evaluate scale-up effects and identify where additional technology development and research is required. The verification ponds are used as sites for field days to demonstrate the effects of research recommendations on farms.

6. Situation and priorities

Some commercial producers are reluctant to adopt and apply new research findings on their farms because of the discrepancies between research and commercial settings, commercial ponds being 40 to 100 times larger than research ponds. Multiple studies on stocker catfish production and the modular production system have been conducted in the last few years. New Extension recommendations on the modular system need to be drafted and verified in a commercial setting. Some commercial producers are reluctant to adopt and apply new research findings on their farms because of the discrepancies between research and commercial settings, commercial ponds being 40 to 100 times larger than research ponds. Priorities are to verify the effect of the research based feeding recommendations on commercial golden shiner ponds, especially the effect on water quality and dissolved oxygen levels, and to increase the rate of adoption of research recommendations.

7. Assumptions made for the Program

• A sufficient number of commercial producers are willing to cooperate in the program. • Cooperating commercial farmers will follow all Extension recommendations throughout the program. • County Extension agents will have the time to cooperate in the program and assist with data collection and field visits. • Extension recommendations will improve farm efficiency and profitability. • A sufficient number of commercial producers are willing to cooperate in the program. • Cooperating commercial farmers will follow all Extension recommendations throughout the program. • County Extension agents will have the time to cooperate in the program and assist with data collection and field visits. • Extension recommendations will improve farm efficiency and profitability.

8. Ultimate goal(s) of this Program

Increase the number of Arkansas catfish farms that follow Extension’s recommendations on the modular production system and increase production efficiencies and profitability of those farms. Increase the number of Arkansas baitfish farms that follow Extension’s recommendations on golden shiner production and increase production efficiencies and profitability of those farms.

9. Scope of Program

- In-State Extension

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.5	0.0	0.0
2008	0.0	0.5	0.0	0.0
2009	0.0	0.5	0.0	0.0
2010	0.0	0.5	0.0	0.0
2011	0.0	0.5	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

• Develop management recommendations • Monitor commercial catfish ponds • Publish results • Give presentations

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

Extension	
Direct Methods	Indirect Methods
• One-on-One Intervention • Other 1 (Educational meetings) • Other 2 (PowerPoint presentations)	• Newsletters • Web sites • Other 1 (Posters) • Other 2 (Extension Publications)

15. Description of targeted audience

• Arkansas catfish farmers • Research scientists • County Extension agents

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	250	3800	0	0
2008	250	3800	0	0
2009	300	3800	0	0
2010	170	1800	0	0
2011	250	1800	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 of Publications

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

Output Target

Number of Presentations

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of commercial Arkansas baitfish farmer learning about Extension recommendations and program results

Outcome Type: Short

2007: 90	2008: 90	2009: 90	2010: 20	2011: 20

Outcome Target

Number of Commercial Arkansas catfish farmers adopting Extension recommendations

Outcome Type: Medium

2007: 2	2008: 2	2009: 2	2010: 4	2011: 7

Outcome Target

Number of commercial Arkansas catfish farmers increasing efficiency and profitability

Outcome Type: Long

2007: 2	2008: 2	2009: 2	2010: 4	2011: 7

20. External factors which may affect outcomes

- Other ()

Description

• Cash flow and fish supply on the cooperating farm. • Catfish prices and demand. • Operating costs and cash flow. • Baitfish demand.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description

{NO DATA ENTERED}

22. Data Collection Methods

- Observation

Description

{NO DATA ENTERED}

1. Name of the Planned Program

Small Farm Program

2. Program knowledge areas

- 301 15% Reproductive Performance of Animals
- 203 50% Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 601 5% Economics of Agricultural Production and Farm Management
- 213 30% Weeds 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

The Small Farm Program is a combination of two Small Farm Outreach Training and Technical Assistance Programs (2501), a Risk Management Program, and the Cooperative Extension Program with emphasis on Agronomy. The program is operated in 18 counties in Eastern Arkansas or the row crop area and in 11 counties in Southwest Arkansas or the livestock area. Four extension associates in Eastern Arkansas and two extension associates in Southwest Arkansas provide direct one-on-one assistance and group training to socially disadvantaged farmers (SDFs) and underserved farmers (UFs) in the area. This program is a partnership between the Small Farm Program, the Natural Resource Conservation Service (NRCS), the Farm Service Agency (FSA), the Risk Management Agency (RMA), Silas Hunt CDC, and Heifer Project International (HPI). This program provides direct assistance to farmers in record keeping, completing USDA loan applications, using USDA Conservation Programs to improve land, and in the use of USDA's Price Support, Disaster, and crop insurance programs. The program also provides assistance with row and alternative crop production in Eastern Arkansas and livestock production in Southwest Arkansas. Two newsletters, Farm Sense and Risk Management News are provided directly to participants quarterly. The purpose of this program is to keep SDFs and UFs in business.

6. Situation and priorities

Many SDFs and UFs are not comfortable with and do not trust USDA, and the Cooperative Extension Service (CES), and other agencies. Therefore, many of these farmers don't ask USDA Personnel for assistance in understanding and using USDA Programs or they won't ask for CES recommendation on production. As a result of not using the USDA Agencies, many SDFs and UFs have missed valuable farm income that could have been obtained from the programs; and as a result of not using CES recommendations, many of the SDFs and UFs have low yields which also reduces farm income. These factors have contributed to the decline of SDFs in Arkansas and pose a seroius threat to the survival of SDF's and UFs in Arkansas. Most SDFs and UFs in the area are comfortable with and trust UAPB personnel, therefore UAPB extension associates are assigned to work individually with SDFs and UFs to help them access the programs provided by USDA and the services provided by CES. These associates also introduce them to alternatives enterprises.
The priorities of this program are: to help SDFs and UFs access USDA Programs, to help SDFs and UFs use CES recommendation, to train and assist SDFs and UFs in completing loan applications, and to help SDFs and UFs diversify with alternatives enteerprises.

7. Assumptions made for the Program

SDFs and UFs will trust individuals from UAPB who are assigned to work with them individually and thus access more of the programs provided by USDA and the services provided by CES. SDFs and UFs will improve farm income once they utilize programs available to them through USDA and production recommendation available through CES.

8. Ultimate goal(s) of this Program

The ultimate goal of this project is to help SDFs and UFs become self sufficient in owning, operating and maintaining their farms.

9. Scope of Program

- In-State 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	0.0	4.0	0.0	0.0
2008	0.0	4.0	0.0	0.0
2009	0.0	4.0	0.0	0.0
2010	0.0	4.0	0.0	0.0
2011	0.0	4.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

The following activities will be conducted: educational meetings, alternative enterprise tours, newsletters, news articles, fact sheets, one-on-one assistance, assistance with loan applications, assistance in developing production plans, assistance in developing marketing plans, assistance in using USDA Program, and assistance in using CES recommendations.

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 (Tours)	• Public Service Announcement • Newsletters • Other 1 (News Articles) • Other 2 (memorandum to Farmers)

15. Description of targeted audience

The targeted audience for the Small Farm Program include African Americans, Hispanics, Women, and farms with gross farm sales less than $50,000.

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	6300	10000	250	300
2008	7000	10000	250	300
2009	7000	10000	250	300
2010	7500	10000	250	300
2011	8000	10000	250	350

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Output is measured by the following numbers: contacts, educational meetings conducted, tours sponsored, news articles published, newsletters published, and fact sheets developed. Output is also measured by the number of SDFs & UFs that are: assisted with loan applications, assisted in developing production plans, assisted with marketing, informed about different USDA Programs, and informed about the CES.

2007: 600 2008: 600 2009: 650 2010: 700 2011: 800

Output Target

Output will be measured in the following ways: the number of clients using the Small Farm Program services, the number of clients assisted with loan applications, the number of clients assisted in using USDA Conservation Programs, the number of clients using other (price support, disaster) USDA Programs, the number of clients using CES Programs, and the number of clients using alternative enterprises to increase income on their farm.

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Outcomes will be measured by number of farmers participating in the program, number of farmers assistaned with loan applications, amount of loan funds received as a result of assistance with application, number of farmers assisted in signing up for Conservation Programs, amount of conservation funds received by clients, number of farmers assisted in signing up for Price Support (Disaster, NAP, LAP, LDP, DCP) programs, amount of income clients received by using programs, number of farmers assisted in using CES recommendations, economic impact from farmers using CES Programs, and number of farmers informed about alternative enterprises, and number of farers adding alternative enterprises to their operation.

Outcome Type: Short

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

20. External factors which may affect outcomes

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

Description

Natural disasters such as droughts and excessive rains can significantly reduce farm income. Asian Soybean Rust has the potential to reduce soybean yields (most SDFs and UFs in Eastern Arkansas grow soybeans) by 80%. Also this program is funded by grants, which may or may not be available.

21. Evaluation studies planned

- During (during program)
- Case Study

Description

Each objective of project is to be evaluated with a evaluation survey. This survey will be completed by producers in the program. Some of the questions that will be asked by the evaluation forms are as follows: the producers opinion on quality of service provided by UAPB, if service was useful, if farmer benefitted from service, if farmers opinion or action changed as a result of the service, and economic impact from service. Objectives may be modified as a result of information obtained from the evaluationsform.
A case study for two participants will be conducted in conjunction with the Agricultural Economic unit at UAPB. Several years of records from producers will be provided to the Agricultural Economics Unit for analysis to determine if any improvement in the operation has occurred.

22. Data Collection Methods

- On-Site
- Case Study

Description

The evaluation survey form is given to project participants to complete during the project period. This evaluation form is generally given during one-on-one visits with the farmer. The case study information is collected annually by an extension associate on a specific operation. This information includes acres of crops, income, expenses, yields, and any improvements mades.

1. Name of the Planned Program

Value Added Products

2. Program knowledge areas

- 502 25% New and Improved Food Products
- 503 25% Quality Maintenance in Storing and Marketing Food Products
- 501 25% New and Improved Food Processing Technologies
- 712 25% Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxi

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

4. Program duration : Medium Term (One to five years)

5. Brief summary about Planned Program

Fresh-cut produce has been successful in the marketplace because of the value added to the product through its preparation and delivery in a ready-to-eat condition and the increased consumer demand for fresh and convenient food. Because fresh-cut produce can be consumed raw without further heating or cooking, the microbial stability, and nutritive and sensory quality need to be optimized. Therefore, this project will focus on each preservation technology to determine microbiological and sensory quality of fresh-cut produce and then, combinations of preservation technology to get hurdle effect to improve total quality of fresh-cut produce. In addition, the program will study various packaging, storage, and value-added processing methods of blackberries.

6. Situation and priorities

Fresh-cut produce is any fresh fruit or vegetable that has been physically altered its original form by minimal processing steps such as cleaning, peeling, cutting, trimming, coring, slicing, or shredding. Fresh-cut fruit and vegetable products retain unprocessed and fresh-like sensory qualities. Fresh-cut produce is one of the fastest growing value-added products in U.S. There are various types of fresh-cut produce currently available in the market including over-wrapped fresh-cut fruit, refrigerated jarred cut fruit, packaged fresh-cut fruit or vegetable, or pre-cut salads. Fresh-cut processing may cause severe tissue damage on fresh-cut produce, leading to rapid quality deterioration and provide greater opportunity for contamination by pathogenic microorganisms. It is also important during the shelf life to keep minimally processed products fresh without losing its nutritional and sensory quality. Factors controlling the shelf life of minimally processed fruit and vegetable products are a result of a complex process of physico-chemical and biochemical modifications that can affect flavor, color, and texture. Fresh-cut produce is generally consumed raw without additional cooking. It is essential to assure that fresh-cut produce is free of pathogens. Therefore, this project will try to identify value-added processing procedures that can provide fresh-cut produce better quality and safety. Optimum processing procedures will be selected from data obtained from research experiments. Farmers who are interested in fresh-cut produce as value-added products can adopt the processing procedures for their product development. Currently, farmers in Arkansas produce a variety of vegetables including peas, beans, okra, leafy green vegetables, cucumber, pepper, etc. However, fresh-cut produce in this project may focus on packaged pre-cut or prepared vegetable salads.

7. Assumptions made for the Program

Fresh-cut products produced by selected procedures developed through this project may be more safe and wholesome than regular products. These products may offer produce growers and farmers an opportunity to increase sales by adding value to raw agricultural commodities and may be beneficial to farmers' niche markets in Arkansas, offering consumers ready-to-eat produce that is safe, high quality, convenient, nutritious and good tasting.

8. Ultimate goal(s) of this Program

Optimized microbiological and sensory quality of fresh-cut produce will provide increased marketing opportunities for small farm producers.
Improved packaging, storage and value added methods of blackberries will increase profitability of the crop for small farm producers.

9. Scope of Program

- In-State Research

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.3	0.0	0.4
2008	0.0	0.3	0.0	0.4
2009	0.0	0.3	0.0	0.4
2010	0.0	0.3	0.0	0.4
2011	0.0	0.3	0.0	0.4

Outputs for the Program

13. Activity (What will be done?)

Conduct experiment 1)in determining effect of antibrowning agents on quality of fresh-cut produce, based on the methodology without modified atmosphere packaging; 2)in determining sanitizers, antimicrobials, packaging on quality and shelf-life of fresh-cut produce under MAP; 3)in determining effect of edible coatings containing antibrowning and/or antimicrobials on quality and shelf-life of fresh-cut produce; 4)in determining the combination effect of post-harvest treatments and packaging on the survival and growth of surrogate strains of Listeria monocytogenes and Escherichia coli O157:H7 on fresh-cut produce; 5) evaluate ten blackberry cultivars for various packaging, storage and value-added methods.

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

Extension	
Direct Methods	**Indirect Methods**
• Workshop • One-on-One Intervention	• Newsletters

15. Description of targeted audience

Local farmers and limited resource farmers

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	0	0	0	0
2008	10	30	0	0
2009	10	30	0	0
2010	20	30	0	0
2011	20	30	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

Three abstracts and three presentations at the scientific annual meetings.
Three peer reviewed publications.
Three presentations and/or workshops to farmers.

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Increase number of small farmers and producers who adopt UAPB's Fresh-Cut Processing Technology and utilize it for their fresh-cut process.

Outcome Type: Short

2007: 0 2008: 40 2009: 40 2010: 40 2011: 40

20. External factors which may affect outcomes

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

Description

Weather conditions may affect crop production needed for the research.

21. Evaluation studies planned

- Comparisons between program participants (individuals,group,organizations) and non-participants

Description

Determine if fresh-cut processing procedures developed produce products with better quality and safety using analytical and organoleptic analysis.
Determine if small farmers who adopted UAPB's Fresh-Cut Process Procedure are satisfied with the procedure by survey.
Determine if UAPB's Fresh-Cut Process increases sales of their products by survey.

22. Data Collection Methods

- Mail
- Telephone
- On-Site
- Other ()

Description

Initially a survey will be conducted with farmers and extension specialists to identify and prioritize what fruits and vegetables are applicable to this project. Research experiments will be proceeded. Based on research data, optimum processing procedures will selected. Processing procedure will be provided to farmers. After processing procedures are implemented, number of newly developed fresh-cut fruit and vegetable products will be determined from farmers who adopt the processing procedures.

1. Name of the Planned Program

Water and Environmental Quality

2. Program knowledge areas

- 112 20% Watershed Protection and Management
- 403 20% Waste Disposal, Recycling, and Reuse
- 133 20% Pollution Prevention and Mitigation
- 204 20% Plant Product Quality and Utility (Preharvest)
- 111 20% Conservation and Efficient Use of Water

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

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

5. Brief summary about Planned Program

The United States is the world's second largest producer, consumer, exporter, and importer of pork and pork products. These hogs generate an estimated 120 million to 200 million tons of solid waste per year. Surface water quality associated with swine waste is a key concern for many small farmers in the Southern U.S. This multidisciplinary research examines the effectiveness of a swine waste treatment system and a near-by constructed wetland system for reducing total nitrogen and total phosphorus in swine waste water. The specific research objectives of this project are: 1) Monitor and compare long-term water quality in the swine waste treatment system lagoon prior to transport to near-by constructed wetland cell, 2) Hach test-in-tube total nitrogen and total phosphorus tests will be used to analyze water samples. Comparisons of inlet and outlet samples will be conducted and 3) Monitor and validate beginning and ending water quality associated with treated lagoon effluent from constructed wetland cells planted with a nutrient reducing hydrophyte (Canna spp.). The specific Extension objectives of this project are: 1) Utilize the Swine Waste Treatment System and Constructed Wetland System as public outreach/demonstration examples for local farmers, and 2) Develop print and video resources to instruct small swine producers of the engineering and design criteria for constructing and utilizing a swine waste treatment system and constructed wetland for farm watershed water quality improvement. In addition to the above water quality methodology, Canna spp. will be analyzed for nitrogen and phosphorus at the end of the growing season. Total nitrogen will be analyzed using the combustion method. Phosphorus will be analyzed using the colorimetry method. Comparisons of inlet and outlet water quality will be made from year to year. Future work will include the use of different wetland plants in the constructed wetland, air quality and cut plant production evaluations. Preliminary work has focused on the preparation of Canna spp. seeds for planting. We found that the most effective technique for preparing Canna spp. seeds, is an acid bath immersion. This method may easily be used to prepare large numbers of seeds for planting with high germination percentages. Extension objectives will be address in sequence to the research program.

6. Situation and priorities

The protection and conservation of water quality, quantity and the environment are vitally important to the health and development of thriving rural communities. The first line of defense (protection and conservation) rests with small, limited resource landowners/operators, underrepresented communities and families. Protection and conservation of the farm environment and water resources rely on research that addresses community based issues and the education of communities along with the assistance of water quality professionals. In Arkansas and much of the southern U.S. the pollution of surface and groundwater is strictly prohibited. No sewage, food, garbage, drainage from swine operations may be discharged or disposed of by means or manner that jeopardizes ground water quality, or waters of the state. More specifically, this research seeks to address water and air quality issues associated with small swine farms and opportunities for small farm income through cut flower markets associated with wetland plants.

7. Assumptions made for the Program

Assumptions: -Using septic tanks to collect solid swine waste will reduce the odor associated with swine production. -An anaerobic swine waste treatment lagoon which predominantly contains liquid waste (excluding solid waste) will exhibit tolerable odor. - An anaerobic swine waste treatment lagoon which predominantly contains liquid waste (excluding solid waste) will reduce nitrogen levels with sufficient retention time. -A constructed wetland system will reduce nutrient level associated with swine effluent from an anaerobic waste treatment lagoon. -A constructed wetland system is capable of producing cut plant production for resale.

8. Ultimate goal(s) of this Program

Goal: Enhance water quality/quantity and environmental conservation efforts of small, limited resource landowners, underrepresented communities, and families through research and extension programs that emphasize and encourage the adoption of sustainable consumer and production practices.

9. Scope of Program

- 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 : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	1.1	0.0	1.3
2008	0.0	1.1	0.0	1.3
2009	0.0	1.1	0.0	1.3
2010	0.0	1.1	0.0	1.3
2011	0.0	1.1	0.0	1.3

Outputs for the Program

13. Activity (What will be done?)

Compile beginning and ending water quality measurements associated with swine waste treatment lagoon. Compile beginning and ending water quality measurements associated with constructed wetland cells and varied aquatic plants. Compile water quality measurements associated with the UAPB Demonstration Farm pond. Develop hill-slope runoff model output for the farm watershed using the APEX model (similar to EPIC). Conduct at least one Swine Waste Treatment System Outreach/Demonstration Meeting each year. Conduct at least one Farm Water Quality Improvement Outreach/Demonstration Meeting each year. Complete one peer reviewed research article every two years. Complete one fact sheet every year. Document the number of small, local and limited resource farmers that have been assisted with swine waste treatment, odor and/or water quality issues each year.

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

Extension	
Direct Methods	**Indirect Methods**
• Demonstrations	• TV Media Programs • Web sites • Other 1 (Fact Sheets)

15. Description of targeted audience

The target audience includes but is not limited to small, limited resource landowners, underrepresented communities, and families.

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	90	180	40	80
2008	100	200	50	100
2009	110	220	60	120
2010	120	240	70	140
2011	130	260	80	160

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Complete one peer reviewed research article every two years.

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

Output Target

Document the number of small, local and limited resource farmers that have been assisted with swine waste treatment, odor and/or water quality issues each year.

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

Output Target

Complete one fact sheet regarding water quality, swine waste management or environmental stewardship each year.

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

The number of conservation practices utilized by swine farmers as a result of this project.

Outcome Type: Long

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

Outcome Target

Increase awareness of environmental issues and policies that pertain to operating small swine farms.

Outcome Type: Short

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

20. External factors which may affect outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Public Policy changes

Description

This project may be affected by stochastic weather events. Rainwater runoff is factored into the environmental requirements for the swine waste treatment lagoon and constructed wetland cells. The lack of suitable rain events may have an adverse effect on the project's outcome. Changes in both state and federal water policy will also need to be addressed if they occur.

21. Evaluation studies planned

- During (during program)

Description

The outcome indicators listed below will serve as the basis for evaluating the project. 1. Improve water quality in the UAPB Farm Pond with the use of the Constructed Wetland 2. Treat swine waste from the UAPB Farm in accordance with State Regulation Five of the Pollution Control and Ecology Department 3. Increase the number of small and limited resource farmers that use swine waste treatment practices (odor, water quality, solid and liquid waste treatment) as a result in our demonstration and training. 4. Increase the number of conservation practices utilized by swine farmers as a result of outreach and assistance provided by the project. Annual reports will record the progress of the project in meeting the project goals. Progress from year to year will provide a quantitative assessment of the projects effectiveness.

22. Data Collection Methods

- Sampling
- Observation

Description

1) Evaluate the long-term effectiveness of a swine waste treatment lagoon for treating swine waste from a confined swine holding area. The long-term effectiveness of a swine waste treatment lagoon will be assessed by monitoring the water quality of the treatment lagoon on a weekly basis during the spring and summer months (April-July). Fecal coli form in the samples will be analyzed with the mFC agar method . 2) Evaluate the effectiveness of a constructed wetland for treatment of hill-slope runoff from a small farm watershed. The effectiveness of various wetland plants within the constructed wetland will be evaluated for nutrient removal potential. Water sampling will be conducted during the spring and summer months (April-July). Samples from the UAPB farm pond, the water entry point of the created wetland (CWL), and the discharge of the CWL will be collected. Hach test-in-tube total nitrogen and total phosphorus tests will be used to analyze nitrogen and phosphorus water samples. The constructed wetland vegetation will be rotated on a three year basis with vegetation harvest after the third year. Constructed wetland vegetation may include Juncus usitatus (Common Rush), Typha spp. (Cumbungi) and Polygonum amphibium (water smartweed) and Cannas spp. (Canna Lillies). The vegetation will be analyzed for nitrogen and phosphorus after the three-year rotation. 3) Evaluate the odor associated with a swine waste treatment lagoon. The olfactometry method will be used to measure odor concentration in lagoon air both before and after establishment of odor mitigating vegetation. 4) Model hill-runoff from a small farm watershed using the Agricultural Policy Extender (APEX) model. The hydrologic and biological processes involved in row crop agriculture and confined livestock may be simulated with the APEX distributed parameter model. Extension Methods by Objective: 1) Utilize the Swine Waste Treatment System and Constructed Wetland System as public outreach/demonstration examples for local farmers. The annual UAPB Farm Field Day and planned site visits are mechanisms by which demonstrations of the two systems will be exhibited. 2) Develop print and video resources to instruct small swine producers of the engineering and design criteria for constructing and utilizing a swine waste treatment system and constructed wetland for farm watershed water quality improvement. Small swine producers will be assisted with technical information regarding the engineering and design criteria for constructing and utilizing a swine waste treatment systems that meets their farm need. Print and video resources will be developed to assist small swine producers and disadvantaged farmers with federal, state and local policies regarding the treatment and disposal of swine waste and the design and implementation of a swine waste treatment system.

1. Name of the Planned Program

Youth Fishing and Aquaculture Education

2. Program knowledge areas

- 806 100% Youth Development

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

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

5. Brief summary about Planned Program

This program will involve young people in fishing and aquaculture education and recreational activities. The program is expected to assist teachers to integrate basic academic skills in a hands-on activity, to teach positive lifelong habits and values, and develop an appreciation for environmental stewardship.

6. Situation and priorities

Fishing can be a hobby that teaches kids positive lifelong values, which can prevent kids from using drugs and taking part in other detrimental behavior. However, the number of youth who fish has been declining the past twenty years. The decline is partially due to the movement of people into cities, where fishing can be limited when compared to rural settings. Fishing can be an activity enjoyed by kids who live in rural or urban settings, when fishing activities and suitable fishing areas are made available for the community. Aquaculture is also an excellent way to teach traditional subjects in a non-traditional learning environment. Traditional classroom instruction includes teaching math, chemistry, and biology in separate classes within a formal setting.

7. Assumptions made for the Program

Extension agents are perfect mediums for introducing youth to fishing education through 4-H activities, county fishing clubs, and using educational fishing curricula in county meetings. However, county agents have had little or no support in the past in the area of youth fishing education. We will provide that support by responding to County Extension Agent needs in the area of youth fishing education. These needs have been determined through a needs assessment survey and prioritized. In Arkansas, some high schools use aquaculture as an alternative to traditional agriculture when space is limited, or the school is within city limits. Schools also use aquaculture as a non-traditional teaching method of agriculture.

8. Ultimate goal(s) of this Program

Children will learn to appreciate the outdoors and learn about the natural environment.

9. Scope of Program

- In-State Extension

Inputs for the Program

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

11. Expending other then formula funds or state-matching funds : No

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	0.0	0.6	0.0	0.0
2008	0.0	0.6	0.0	0.0
2009	0.0	0.6	0.0	0.0
2010	0.0	0.6	0.0	0.0
2011	0.0	0.6	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Provide 4-H approved youth fishing education program materials to county agents. Maintain a youth fishing trailer and train agents in its use. Also add fishing education module to the trailer for county agents to use. Work with 4-H and county agents directly to implement new or improved sportfishing and aquatic curriculums, which include Baitcasting and Reel Into Sportfishing competitions. Organize and conduct workshops through CE aents that deal with aquatic education and 4-H O'Rama activities. Continue to provide assistance with county, regional, and state O'Ramas. Two types of systems will be set up; one with very low technology and a second with better technology. Raise all tilapia needed for the schools during the summer and overwinter broodstock for spawning the following year. Some small fish should also be overwintered to re-supply systems that fail.

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

Extension	
Direct Methods	Indirect Methods
• One-on-One Intervention • Demonstrations • Other 1 (Fishing Derbies) • Other 2 (Educational meetings)	• Newsletters • Web sites • Other 1 (Extension Publications)

15. Description of targeted audience

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	100	100	1000	400
2008	150	100	1100	100
2009	200	100	1000	200
2010	200	100	1000	400
2011	200	100	1000	400

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

{NO DATA ENTERED}

: {NO DATA ENTERED} : {NO DATA ENTERED} : {NO DATA ENTERED} : {NO DATA ENTERED} : {NO DATA ENTERED}

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target
Number of County Extension agents using the aquatic education fishing trailer for youth fishing activities

Outcome Type: Short

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

Outcome Target
Number of students participating in events related to aquatic education fishing trailer

Outcome Type: Short

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

Outcome Target
Number of students participating in specific aquatic education events, such as 4-H O'Rama Events, aquatic and fishing workshops, and educational derbies

Outcome Type: Short

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

Outcome Target
Number of County Agents using the fishing education modules

Outcome Type: Short

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

Outcome Target
Number of students participating in events involving the fishing education module

Outcome Type: Short

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

Outcome Target
Number of County Extension agents using the aquatic education fishing trailer for youth fishing activities

Outcome Type: Medium

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

Outcome Target
Number of students participating in events related to the aquatic education fishing trailer for youth fishing activities

Outcome Type: Medium

2007:	1300	2008:	1300	2009:	1300	2010:	1300	2011:	1300

Outcome Target
Number of students participating in specific aquatic education events, such as 4-H O'Rama Events, aquatic and fishing workshops, and educational derbies

Outcome Type: Medium

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

Outcome Target
Number of County Agents using the fishing education modules

Outcome Type: Medium

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

Outcome Target
Number of students participating in events involving the fishing education module

Outcome Type: Medium

2007:	150	2008:	150	2009:	150	2010:	150	2011:	150

Outcome Target
Number of contacts by email and telephone from teachers related to recirculation systems

Outcome Type: Short

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

Outcome Target
Number of teachers participating in aquaculture workshops

Outcome Type: Short

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

Outcome Target
Number of tilapia delivered to teachers

Outcome Type: Short

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

Outcome Target
Number of teachers using tilapia

Outcome Type: Short

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

Outcome Target
Number of teachers receiving aquaculture education newsletter

Outcome Type: Short

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

Outcome Target
Number of schools visited annually

Outcome Type: Short

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

Outcome Target
Number of contacts by email and telephone calls from teachers related to recirculation systems

Outcome Type: Medium

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

Outcome Target
Number of teachers participating in aquaculture workshop

Outcome Type: Medium

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

20. External factors which may affect outcomes

- Other ()

Description
Global economic situation changes, regulatory laws change.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)

Description
{NO DATA ENTERED}

22. Data Collection Methods

- On-Site
- Observation

Description
{NO DATA ENTERED}