2010 University of Arkansas at Pine Bluff Combined Research and Extension Annual Report of Accomplishments and Results

Status: Accepted

Date Accepted: 06/14/2011

I. Report Overview

1. Executive Summary

The School of Agriculture, Fisheries and Human Science administers the1890 research and Extension programs at the University of Arkansas at Pine Bluff. The School consists of three academic departments, Agriculture, Fisheries and Human Science. Federal, state and private funds of more than $5.3 million supported sixty-six ongoing projects with most of the research projects conducted at the UAPB campus site, with some activities occurring at the UAPB Lonoke and Marianna farm sites. Additional studies were conducted on cooperating farm sites in Jefferson, Lee, St. Francis, Monroe and Phillips counties and with other institutions such as the Felsenthal National Wildlife Refuge.

Faculty submitted external grant proposals which resulted in twenty-three newly funded projects that added $2.8 million in funding to support Research and Extension activities. The knowledge gained by these research activities were extended to families and communities through a variety of outreach and Extension programs. The extension program has structured programs in 29 counties with staff housed in 10 counties.

Research and Extension in Agriculture are conducted in the areas of plant science, animal science and agricultural economics. The efforts in the Department of Human Science are directed toward human nutrition, food safety and family life.

The Agriculture and Human Science components of the Research and Extension programs are designed to provide information and assistance to small-scale and limited resource farmers and disadvantaged families and youth. The Aquaculture/Fisheries program supports both the state's aquaculture industry and recreational fishing as an avenue for enhancing tourism as an economic engine for the state. Research and Extension in Agriculture are conducted in the areas of plant science, animal science and agricultural economics. The efforts in the Department of Human Science are directed toward human nutrition, food safety and family life. The Agriculture and Human Science components of the Research and Extension programs are designed to provide information and assistance to small-scale and limited-resource farmers and disadvantaged families and youth. The Aquaculture/Fisheries program supports both the state's aquaculture industry and recreational fishing as an avenue for enhancing tourism as an economic engine for the state.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	23.5	0.0	21.3
Actual	0.0	13.9	0.0	10.5

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

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

2. 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. A peer review panel process is in place to review extension publications and internal research publications.

The Merit Review Process in SAFHS resulted in review of over 23 manuscripts accepted for publication over the past year. The University has alsobeen granted permission to offer a Ph.D. in Aquaculture/Fisheries. The request for the Ph.D. program grew from demand by stakeholders in Arkansas whose industry depends upon the scientific research and extension efforts of the UAPB Aquaculture/Fisheries Center. This request is further rooted in the University of Arkansas at Pine Bluff's land-grant and expanded mission which charges the University to develop innovative activities and use technology to help solve problems. This request is related to the economic growth of the Arkansas Delta through its aquaculture/fisheries industry. The UAPB Aquaculture/Fisheries Center of Excellence is a key partner of the aquaculture industry and natural resource managers in Arkansas. Given the strong support for the Ph.D. program provided by these institutions and alliances, a Ph.D. program in Aquaculture/Fisheries will serve to offer expanded science based support for economic growth of the state, region, and nation.

III. Stakeholder Input

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

- 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.

The Interim Research Director of the School of Agriculture, Fisheries and Human Sciences has served in this position since July 2008. The Interim Director used the formal stakeholder input developed by the Agriculture Research & Extension Council and the Aquaculture-Fisheries Center of Excellence Advisory Committee as external advisors for the School's extension and research programs. He also evaluated the makeup of these two stakeholder groups for effectiveness in the input process. Although both stakeholder groups were effective, the Agricultural group's membership has been dissolved and new members were appointed. The appointment of new

members was necessary due to the moderate level of participation by former members. Therefore, this past year we recieved program input from the newly appointed AREC membership.

The UAPB Aquaculture/Fisheries Center (AFC) prides itself on the level, scope, and effectiveness of its interactions with stakeholders. Input and interaction with stakeholders occurs on an almost daily basis with personnel in the Center. Individual farmers, representatives of trade associations, and board members interact frequently with Center Researchers and Extension Specialists. The interaction often is initiated with a request for some specific type of information. The specific questions often expand into broader discussions as the state of knowledge in particular areas through which additional research needs become readily apparent. For the natural fisheries Research and Extension areas, the primary stakeholder defined for the UAPB Aquaculture/Fisheries Center is the Arkansas Game and Fish Commission (AGFC). The increased interaction with the Arkansas Game and Fish Commission in recent years has facilitated greater communications. Formal input is obtained through the representation of the Arkansas Game and Fish Commission on UAPB'S National Aquaculture/Fisheries Advisory Council. Additional opportunities for interaction and input are available at the statewide meeting of the Arkansas Chapter of the American Fisheries Society (AFS). Many AGFC managers and biologists attend these meetings. Also, the increasing involvement of Center scientists on committees of the Southern Division of the AFS and at the national level provide opportunities for additional input because a number of AGFC personnel continue to be active in those settings.

2(A). A brief statement of the process that was 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
- Other (Stakeholder input is a core component of all 1890 research and Extension programs. Means for acquiring input)

Brief explanation.

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 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 stakeholder input process is structured individually by departments/schools to represent the differences in audiences served. This approach is taken because the clientele needs for research and Extension assistance in programs other than aquaculture are broad in scope, local in nature and geographically limited. While the Aquaculture Program provides research and Extension support for all aquaculture producers in the state, other programs support under-served and diverse audiences in a specific number of counties.

The Agriculture Research and Extension Advisory Council (AREAC)

The AREAC was originally 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. The AREAC was re-organized in 2010 with only slight changes in the membership structure that would allow the Council to be more responsive to the research and outreach needs of the School of Agriculture, Fisheries and Human Sciences. Members will serve on the Counsel on a three year rotating basis. Membership includes seven (7) producers engaged in a variety of agricultural enterprises (i.e. alternative crops, row crops, livestock, etc.) two (2) current and retired Extension professionals (one from 1890 and one from 1862) two (2) federal agency (NRCS, FSA) representatives, four state agency (Arkansas Department of Environmental Quality, Rural Development, Arkansas Land and Farm Development, and Arkansas Natural Resources Commission) representatives and two (2) industry (Monsanto, Delta Yams) representatives. 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 re-organization of the Agriculture Research and Extension Advisory Council (AREAC) is currently underway. Recruiting new membership, organizing a rotation of terms for members and evaluation of their participation will strengthen this group as an integral stakeholder input group.

The Aquaculture-Fisheries Center of Excellence Advisory Committee

The primary advisory committee that provides feedback and input into the UAPB Aquaculture/Fisheries Program is the National Aquaculture/Fisheries Advisory Council. It includes representation from catfish, baitfish, and sportfish farms, feed mills, Arkansas Game and Fish Commission, U.S. Fish and Wildlife Service, and other university programs. 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. At the most recent meeting on February 25, recommendation included continued work on new feed formulation, marketing structures, cash flow and financial management, diseases, new chemicals approved for non-food fish, new hatchery techniques for public stocking programs, and more training for AGFC biologists. Lake Village, Arkansas, to plan the mid-year and annual educational meetings that are hosted by UAPB for the Catfish Farmers of Arkansas. The Chicot County Extension programs also derive their input from this committee's advice. Lonoke County gain stakeholder input into program development from these meetings. The Lonoke County Agricultural Office, the operates as part of the 1862 State Extension Service also hosts an annual advisory committee meeting to acquire aquaculture industry input and feedback for their Extension program. UAPB Aquaculture/Fisheries Center staff is invited to participate in these meetings to facilitate information transfer between the 1890 Cooperative Extension Program, the 1862 State Extension Service and industry members.

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. Members of the Facilities Subcommittee meet on a regular basis to plan UAPB Aquaculture/Fisheries Center facility expansion and develop resources for new facilities. The Catfish Subcommittee meets twice a year and 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.

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. Our specialists in agriculture, family and community programs work with 1862 county agents, as requested, to organize clientele groups

through community-based organizations, schools and the faith-based community. Both research and Extension programs in Aquaculture/Fisheries and in Agriculture and the Family and Consumer Sciences Extension program utilize an advisory committee structure as a major component of the stakeholder input process. The Human Sciences Research program employs other mechanisms to obtain stakeholder input.

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

1. Methods for collecting Stakeholder Input

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

Brief explanation.

Informal methods of collecting stakeholder input occur regularly with faculty, researchers and extension specialists interacting with clientele during program presentations, direct farm contacts and field days. Individual department advisory committees have been utilized for individual program input. Examples of this have been provided in other sections of this report.

3. A statement of how the input will be considered

- To Identify Emerging Issues
- Redirect Research Programs
- In the Action Plans
- To Set Priorities

Brief explanation.

Informal input from stakeholders is presented and discussed at formal meetings with research faculty and staff. Strategies will be developed to address identified concerns as appropriate. Faculty are represented on all structured committees for purposes of participating in the discussion and gathering the input from stakeholders that will later be presented back to faculty and staff. One example of input from a structured committee currently being implemented is the Foundation Seed program for sweet potatoes. The February 2006 meeting of the Agriculture, Research and Extension Advisory Committee raised the issue of support for the sweet potato industry emerging in Eastern Arkansas. The input from the session was incorporated into outreach efforts (more extensive efforts with Sweet Potatoes, enhanced technical support for value-added processing, and expansion of the role and geographic scope of the Small-Farm Program).Each issue was addressed through program initiatives as allowed by available funding. As a result of the above efforts, the University has received state funding to develop a Foundation Seed Project for sweet potatoes in Arkansas. The project will provide disease free, mutation free sweet potato planting material to producers that will multiply these materials and in turn provide the multiplied planting material to the Arkansas community of sweet potato farmers.

The most recent stakeholder meeting resulted in suggestions for holding two meetings each year, and taking care not to shift a disproportionate amount of the attention to the new foundation sweet potato seed program to the detriment of other 1890 agricultural programs.

Brief Explanation of what you learned from your Stakeholders

Input from stakeholders through the agricultural Extension agents and program assistants in the field continue to play a major part in program development. The group of farmers and packing house operators continue to voice the need to support the growing sweet potato production in Arkansas. Sweet potato research was expanded in the area of product development and the Extension program has given increased attention to farmer production problems.

The Aquaculture-Fisheries Advisory Committee continues outstanding input for the research and Extension programs. This year the Committee focused on the continued development of the Ph.D. program in Aquaculture-Fisheries and the economic plight of producers in the region. The Committee strongly supported the development of this graduate program because direct impact it would have on the research and Extension.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	1854332	0	2152523

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	0	1838442	0	2173342
Actual Matching	0	1615635	0	1939760
Actual All Other	0	0	0	0
Total Actual Expended	0	3454077	0	4113102

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	0	217723	0	355942

V. Planned Program Table of Content

28	Food Safety in Aquaculture

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Human Nutrition

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
702	Requirements and Function of Nutrients and Other Food Components		0%		20%
703	Nutrition Education and Behavior		0%		80%
	Total		0%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	0.4
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Awareness of lactose intolerance at the campus of the University of Arkansas at Pine Bluff (UAPB) was done through communication in classes of Nutrition and Wellness HUSC 1311 (20 students) and Elementary Nutrition HUSC 2311 (80 students) spring and fall 2009, respectively. A survey was developed to interview students at the University of Arkansas at Pine Bluff about lactose intolerance. This questionnaire was adapted from the "Questionnaire on lactose intolerance" developed by the Arthur Haulot Institute dietary-nutrition department in Brussels (http://www.medisport.be/questionarya.html). The questionnaire was tested for validity and reliability in spring semester 2010 before being administered to UAPB students.

2. Brief description of the target audience

University students (100) with majority African Americans were educated about the symptoms and causes of lactose intolerance in classes of Elementary Nutrition and Nutrition and Wellness at the campus of the University of Arkansas at Pine Bluff. The questionnaire on lactose intolerance was conducted among 42 African-American students enrolled at the University of Arkansas at Pine Bluff. They were 14 males and 28 females; 14 lived on campus and 27 lived out of campus (one respondent did not complete the question).

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	42	142	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Microbiological testing of yogurts for effective probiotics against lactose intolerance
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Recruitment of participants for the feeding study
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Feeding study
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Workshops on yogurts containing probiotics
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased consumption of yogurt and dairy products containing effective probiotics by at least one serving among participants.
2	Reduced symptoms of lactose intolerance among participants
3	Increased calcium intake among participants
4	Reduced weight gain among participants
5	Increased awareness of health benefits of yogurt and dairy products containing probiotics to the public

Outcome #1

1. **Outcome Measures**

   Increased consumption of yogurt and dairy products containing effective probiotics by at least one serving among participants.

   Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

   Reduced symptoms of lactose intolerance among participants

   Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

   Increased calcium intake among participants

   Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

   Reduced weight gain among participants

   Not Reporting on this Outcome Measure

Outcome #5

1. **Outcome Measures**

   Increased awareness of health benefits of yogurt and dairy products containing probiotics to the public

   Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Other (students dropout from UAPB)

Brief Explanation

Did not travel to Iowa State University to do the microbiological analyses for yogurt samples.
The selection of yogurt samples to be used in the feeding study depends on the microbiological analyses of yogurt samples.

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Horticulture Production

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.7	0.0	0.1
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

1). Conduct training for county extension staff, master gardeners, small-scale and limited-resource farmers, and the youth.

2). Write news columns/articles on various production issues on small fruits and vegetables and develop and review horticultural crops publications and fact sheets.

3). Conduct farm visits.
4).Conduct research on selected horticultural crops to determine the best adapted cultivars for small-scale and limited-resource farmers.

2. Brief description of the target audience

The target audience is the small-scale 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 assist these farmers increase farm profitability and economic status.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2010
Actual: {No Data

Patents listed
{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Increase diversity (number of types of crops grown)of horticultural crops produced by limited-resource and small-scale farmers in Eastern and Southern Arkansas.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Increase the number of limited-resource and small-scale farmers participating in local markets (farmers' markets, pick your own operations, road side stands etc.).
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Increase the quantity of marketable horticultural crops products produced by each limited-resource or small-scale farmer by 50 lbs each year.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase horticultural crop production by recruiting 3 small-scale and/or limited resource farmers each year.
2	Increase economic opportunity by increasing a total of 50 pounds each year of marketable horticultural crops products produced by small-scale and limited-resource farmers.
3	Publish results of on-going blackberry cultivar evaluation trial by 2010 and snap beans cultivar evaluation trial by 2012.

Outcome #1

1. **Outcome Measures**

Increase horticultural crop production by recruiting 3 small-scale and/or limited resource farmers each year.

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Increase economic opportunity by increasing a total of 50 pounds each year of marketable horticultural crops products produced by small-scale and limited-resource farmers.

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

Publish results of on-going blackberry cultivar evaluation trial by 2010 and snap beans cultivar evaluation trial by 2012.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Families, Youth, and Communities

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being		45%		100%
806	Youth Development		55%		0%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	0.4
Actual	0.0	2.3	0.0	0.4

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	393228	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	322044	0	25200
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Two focused programs were addressed in the 1890 Family and Child Development Program. These included Teens on the Go newsletter series, and the Young Scholars Program. The Teens on the Go newsletter, in its 32nd year, was developed for students in grades 7-12. The Young Scholars Program, in its 14th year, was implemented in a housing project in Monroe County. The children, ages 6-15, met 5

days a week, year-long in an after-school program that emphasized math and science skills using human sciences and agriculture subject matters. Parents enrolled in the Young Scholars Program met weekly and focused not only on the curriculum for the children but also on parenting education, stress management, coping and job-related skills, family relationships, and economic and self-sufficiency skills. In FY 2010 the six issues of Teens on the Go included: 1) Break that Bad Habit; 2) Coping with Grief and Loss: When Your World Changes; 3) HIV and AIDS; 4) The Body Robbers; 5) One-night stand or true love: Looking at Love; and 6) Getting Along: Defusing Difficult Situations.

Data were collected from licensed early childhood program directors on their perception of quality. The surveys were used to measure quality in childcare centers and were based on a one-to seven-point scale, on a continuum of one for poor quality and seven for excellent quality. An informational meeting concerning accreditation and the Arkansas Quality Approval System process was held with center directors during the observational visit. An on-site two-hour observation visit was conducted for those respondents who indicated an interest in national accreditation.

2. Brief description of the target audience

The target audiences in the 1890 Family and Child Development focused program included: Teenagers in grades 7-12 for the newsletter, Teens on the Go and parents and their children who live in a housing project in Monroe County, located in the Delta Region of the State for the Young Scholars Program. The children enrolled in the program are referred to as Young Scholars.

The target audience in the research project was the family home day care operators, directors, employees and parents in infant/toddler, and preschool day care centers and Head Start in Jefferson County and Southeast Arkansas.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	67	165	86	57449

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of surveys completed with Day care operators, parents, and staff in Jefferson County and Southeast Arkansas. Also, the number of participants in group educational sesions regarding the research project, etc.

Year	Actual
2010	9

Output #2

Output Measure

- We will provide math and science workshops for children in the Young Scholars Program

Year	Actual
2010	86

Output #3

Output Measure

- Parents will receive training in parenting, stress management, money management, child development, and job- related and coping skills.

Year	Actual
2010	58

Output #4

Output Measure

- Write 6 issues of Teens on the Go for students in grades 7-12.

Year	Actual
2010	6

Output #5

Output Measure

- Thirty-five persent of children enrolled in the Young Scholars Program had an increase in school performance. Forty percent of parents reported being able to meet financial obligations of their families.

Year	Actual
2010	55

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	For child care facilities to improve the quality of child care after becoming more aware of practices that enhance quality of care (e.g., adequate space and equipment indoors and outdoors which allow the children to safely and conveniently develop their large muscles; furniture is sturdy; centers are labeled so that children can return items where they belong and develop their early reading skills; and the room is arranged in special interest areas, such as dramatic play and art centers, etc.)
2	To identify quality practices present in early childhood programs in Southeast Arkansas and to present these practices for adoption by early childhood providers in the region.
3	Forty-five percent of children in the Young Scholars Program will have an increase in school performance
4	Thirty percent of families will report being able to meet the financial obligations of their families.
5	Total contact with Arkansas teens will be 10000 through Teens on the Go.

Outcome #1

1. Outcome Measures

For child care facilities to improve the quality of child care after becoming more aware of practices that enhance quality of care (e.g., adequate space and equipment indoors and outdoors which allow the children to safely and conveniently develop their large muscles; furniture is sturdy; centers are labeled so that children can return items where they belong and develop their early reading skills; and the room is arranged in special interest areas, such as dramatic play and art centers, etc.)

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	376	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Quality child care allows children to enter school with the skills to succeed. The research project, Predictors of Quality in Early Childhood Programs, was designed to measure quality and give parents a tool for selecting early childhood education programs for their young children.

What has been done
A survey was conducted of a select number of early childhood educational facilities in Southeast Arkansas. These included family day care home, day care centers and Head Start.

Results
Respondents indicated a number of factor that make for quality in early childhood educational facitilites. These included: training, reauiring all staff to have at least a minimum CDA training and yearly attendance at professional meetiings for up-dating skills, updated materials and supplies, and adequate facilities and equipment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #2

1. Outcome Measures

To identify quality practices present in early childhood programs in Southeast Arkansas and to present these practices for adoption by early childhood providers in the region.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Forty-five percent of children in the Young Scholars Program will have an increase in school performance

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	55

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
School officials continue to be concerned about the increased number of poor children who experience difficultyu in achieving in such areas as reading, math and science. Experts cite inaadequate readiness for school as being one factor that causes children to lag behind more previliged children.

What has been done
A Young Scholars Program was implemented 14 years ago to address these issues. The program focuses on math and science skills through using human sciences and agriculture subject matter. Special workshops and summer day camp were provided for children enrolled in the program as well as other children in the housing complex to strengthen math and science skills.

Results
Forty-five parents and fifty-five children are enrolled int he program. The parents meet in weekly group sessions. They report using knowledge gained to control debt and stretch the family's income. Published honor roll lists, conferences with teachers and parents confirm the progress of the children enrolled in the program. All students enrolled in the program passed the state

benchmark exams.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development

Outcome #4

1. Outcome Measures

Thirty percent of families will report being able to meet the financial obligations of their families.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	58

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
As the economy shifts many low-income, minority families experience difficulty in meeting their financial obligations. As a result a great number of children suffer because many of their physical and emotional needs are nto met in the family.

What has been done
Parents enrolled int he Young Scholars program meet in small groups weekly to focus not only on the curriculum for the children but also on parent education, stress management, coping and job related skills, family relationships and economic and self-sufficiency skills.

Results
Families self-report that they are better able to meet the financial obligations of their families. All parents reported being food secure. All families indicated having food last through the end of the month.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

806 Youth Development

Outcome #5

1. Outcome Measures

Total contact with Arkansas teens will be 10000 through Teens on the Go.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	57449

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
More than 7 million childrenin tehis country are growing up in poor communities that put them at risk of dropping out of school, becoming teen parents, using drugs, being involved in violence and being incarcerated before they ware old enough to vote. They are the yough who will reach adulthood unprepared to work, parent or contribute to society.

What has been done
Since 1978 a newsletter series, Teens on the Go, has been written for teenagers in Arkansas in grades 7-12. Its purpose is to help teens make better decisions regarding critical issues that impact their lvies. Teenagers receive six issues of the newsletter that focused on enhancing self esteem, relationship, sexuality and drug abuse prevention.

Results
Teenagers in 57 (out of 75) counties received the newsletter in fY 2010. Total contact with teens was 57,449. They reported that the ndwsletter helped them to make better decisions. One student said: "Teens on the Go are great issues. They make you rethink about things that really matter. They helped me to make better decisions and to stand up for what I truly believe in. They helped me to respect myself."

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The economy continues to shift. Some families experienced extreme hard times. Some lost jobs. These situations negatively impacted the participation level of the Young Scholars Program. Extreme bad weather caused a number of day care centers to be closed at the time the survey was conducted. which probably was a factor in the number of respondents received..

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

In FY 2010 students in 57 (out of 75) counties received Teens on the Go. Total contacts with teens were 57,449. Students indicated that the newsletter helped them to make better decisions. One student said: "Teens on the Go are great issues. They make you rethink about things that really matter. They helped me make better decisions and stand up for what I truly believe in. They have helped me learn to respect myself." All children enrolled in the Young Scholars Program passed the required bench-mark exams in school. An increased number of parents reported controlling debt as an achieveable goal.

Key Items of Evaluation

Number of total contacts with teens in grades 7-12 through the newsletter. Teens on the Go and progress of children and parents enrolled in the Young Scholars Program.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Food Animal Production and Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	1.8
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct research experiments and production demonstrations on low cost feed rations for goats and swine. Continue the analysis of data collected from experiments completed in 2008.

2. Brief description of the target audience

The targeted audience will include small limited resource farmers in Southeast Arkansas, college students, high school students and Extension agents.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: {No Data

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Expected reduction in cost of production (%) of swine and meat goats which will result in increased cash earnings and improved economic earnings for samll limited resource farmers. Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Expected increase in farmer income (%) as a result of increased efficiency (low cost input and high product output) of producing market goats and pigs.

Outcome #1

1. **Outcome Measures**

Expected increase in farmer income (%) as a result of increased efficiency (low cost input and high product output) of producing market goats and pigs.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Improved Management Options to Improve Catfish Production Efficiencies and Lower Costs

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals		20%		20%
307	Animal Management Systems		20%		20%
308	Improved Animal Products (Before Harvest)		20%		20%
601	Economics of Agricultural Production and Farm Management		15%		15%
602	Business Management, Finance, and Taxation		15%		15%
603	Market Economics		10%		10%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.5	0.0	0.9
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct tank feeding trials
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
Test various new feed formulations

2. Brief description of the target audience

•Catfish farmers throughout Arkansas •CountyExtension agents •Grocery store manager •Consumers • Commercial catfish producers • Interested potential producers • Commercial Bankers

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1130	3530	698	150

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	2	3	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Refereed Journal Articles

Year	Actual
2010	9

Output #2

Output Measure

- Number of Abstracts Published

Year	Actual
2010	28

Output #3

Output Measure

- Number of Presentations at Scientific Meetings

Year	Actual
2010	26

Output #4

Output Measure

- Number of Trade Magazine Articles

Year	Actual
2010	8

Output #5

Output Measure

- Number of Catfish Farms Adopting Recommendations

Year	Actual
2010	210

Output #6

Output Measure

- Number of Catfish Acres Using Recommendations

Year	Actual
2010	26500

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers willing to test successful ingredients or feeding strategies on a commercial scale
2	Number of Arkansans Gaining Access to and benefitting from Catfish Management Information
3	Number of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry
4	Number of farmers and stores gaining information, adopting recommendations, and increasing sales of catfish

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Catfish feed costs soared beginnin in 2008, reaching the highest levels ever and have remained at higher-than-average levels. Given that feed is the single largest cost component of catfish production, the increased costs of feed have dramatically increased costs of production. It has been difficult to pass these cost increases through to end consumers given market structures and conditions, and farm-level profits have decreased.

What has been done
A series of tan and pond trials have been conducted to test new, less-expensive feeds. In 2010, feeds with two protein levels with and without corn gluten feed were evaluated. The effort was a regional effort with UAPB and Mississippi State University conducting similar trials in multiple batch production with channel catfish and Auburn University evaluating the diets with hybrid catfish in single-batch production.

Results
The pond trials showed no difference due to the use of corn gluten feed. Production performance of larger, carryover fish was not different due to protein levels, but yield of fingerling catfish was significantly lower with the 28% protein diet as compared with the 32% protein diet.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #2

1. Outcome Measures

Number of Arkansans Gaining Access to and benefitting from Catfish Management Information

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	257

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Increasing feed costs have reduced profit marging and increased the need to improve production and financial management on farms.

What has been done
An existing multi-stage mathematical programming model of catfish production was extended to include cash flow, lending, and repayment constraints and activities for various farm sizes and levels of equity. An intensive financial management training module was developed and offered in Arkansas.

Results
Cash flow constraints affected the optimal management plan for catfish farms, with greater changes occurring in the optimal plans for smaller farms. New startup catfish farms would improve cash flow (but not profits) by purchasing large stockers for Year 1, but would need to transition to other management plans to maximize profits in subsequent years. More than 170 catfish farmers participated in the intensive training module on intensive financial management.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management

Outcome #3

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Catfish feed costs soared beginnin in 2008, reaching the highest levels ever and have remained at higher-than-average levels. Given that feed is the single largest cost component of catfish production, the increased costs of feed have dramatically increased costs of production. It has been difficult to pass these cost increases through to end consumers given market structures and conditions, and farm-level profits have decreased.

What has been done
Presentations have been made at catfish farmer meetings throughout the year. Written reports have been published in trade association, and extension newsletters. Individual consultations have been made in response to requests for information from a variety of sources.

Results
Approximately 25% of catfish farmers in Arkansas have adopted the feed formulations that demonstrateed the most favorable economic outcomes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #4

1. Outcome Measures

Number of farmers and stores gaining information, adopting recommendations, and increasing sales of catfish

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	18	237

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The contraction of the catfish industry over the last several years has resulted in negative economic effects on local economics and communities.

What has been done
Presentations have been made at catfish farmer meetings throughout the year. Written reports have been published in trade association, and extension newsletters. Individual consultations have been made in response to requests for information from a variety of sources.

Results
Catfish farmers remaining in the business have implemented changes in their management as a result of extension programming. Others are preparing new business plans with the assistance of UAPB personnel.

4. Associated Knowledge Areas

KA Code	Knowledge Area
603	Market Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Alternative Crop Production

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants				
205	Plant Management Systems				
211	Insects, Mites, and Other Arthropods Affecting Plants				
601	Economics of Agricultural Production and Farm Management				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	2.2
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

The studies will be initiated to identify vegetable crop sequences under rotation and continuous systems will continue in order to identify the most profitable cropping system and the incidence of weeds, diseases and insects. Emphasis will be placed on squash, sweet corn, southern pea, and fall greens. Evaluation of alternative fertilizers for vegetable and ornamental crops and their fertilizer value and efficiency. With recent increases in fertilizer prices, it is urgent to find new types of fertilizers in order to help farmers produce vegetables and ornamentals of superior yield and quality. Further study will evaluate flower and ornamental crops considered to be popular in the lower Mississippi Delta region. Additional experiments will also be conducted to develop a crop protection system against economically beneficial pests using the natural resources. Several natural resources will be considered and determined to improve the efficiency of pest management. The suitable natural resources will be modified as necessary for field use. Establish database for predominant pests in local ornamental and flowering plants. The ornamentals those may have resistant or tolerant against insects' pests, can be identified and extracted to developed future non-restricted insecticidal treatment. The crop have tolerant against pests will be use to developing an attractant to decrease population of the targeted pests.

2. Brief description of the target audience

Small Farms and Limited Resource Farmers. Limited resources farmers grow vegetables, small fruits and ornementals as alternatives to growing row crops. High potential return per acre can be obtained with minimum investment provided best management practices such as crop rotations and insect control are used.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: {No Data

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	2	2	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- The number of LRFs that adopt vegetable rotations/planting sequences, and insect control practices developed by this research.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of contacts with clientele at workshop, field days, demonstrations, etc.
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Published research articles, extension publication and present research data at professional meetings.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	1) Fifty percent of the UAPB LRF's clientele adopt the rotation and insect control practices after five years.
2	2)2-3% of UAPB LRF's will adopt ornamental production after five years.
3	3

Outcome #1

1. Outcome Measures

1) Fifty percent of the UAPB LRF's clientele adopt the rotation and insect control practices after five years.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

2)2-3% of UAPB LRF's will adopt ornamental production after five years.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

3

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	25	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
{No Data Entered}

What has been done
{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
601	Economics of Agricultural Production and Farm Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Herbs, Spices, and Medicinal Crops

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
202	Plant Genetic Resources		50%		25%
502	New and Improved Food Products		50%		20%
701	Nutrient Composition of Food		0%		20%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins		0%		35%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	1.3
Actual	0.0	0.1	0.0	1.3

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Three field experiments were conducted on selected varieties/lines of hot pepper and bitter melon for variety identification and single plant selction. Laboratory experiments were conducted for recipe development and taste testing for two kinds of bitter melon. Beef stews were perpared using white or green bitter melons to compare consumer acceptability and preferences between the two kinds of bitter melons. About 60 persons attending the Field Day at the Agricultural Research Center in Pine Bluff sampled the beef stews and responded on the score sheets. Also, preliminary trials on hot peppers were conducted on processing hot peppers into hot sauce and pepper pickles.

2. Brief description of the target audience

Our targeted audience were leaders of the agricultural, academic and social communities including small scale farmers,home gardeners, and other producers and consumers. Plant breeders & geneticists,

and food scientists were also addressed.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	15	20	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	2	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of research publications

Year	Actual
2010	2

Output #2

Output Measure

- # of promising crop line identified

  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- # of successful food recipes

Year	Actual
2010	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	# of people have knowledge about the new crop lines
2	# of people accept/like to the new crop lines
3	# of people adopted the new recipes in their daily diets

Outcome #1

1. Outcome Measures

# of people have knowledge about the new crop lines

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	20	30

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
About 100 targeted participants who have interests in new health-foods, its special qualities, and availability visited the field demonstration trials of hot peppers, bitter melons, and other exotic varieties of vegetables grown in the field. The small farmers and homegardeners would benefit from producing, processing, and marketing the newly developed high value specialty vegetables.

What has been done
Three field experiments were conducted in 2010. Planting was delayed and seedlings were not strong enough to stand the dry and hot conditionds in the field. Besides, because of unavoidable situations in the field management and weed control, many of the transplanted seedlings did not survive. Harvesting for plot yields was not possible. However, single-plant selection was done to harvest and maintain seeds of the promising varieties and lines.

Results
Three new collections of bitter melon varieties were grown and seeds collected.

Twenty-six new selections of hot peppers were made and seeds collected for next year planting and evaluation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources
502	New and Improved Food Products
701	Nutrient Composition of Food

712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #2

1. **Outcome Measures**

# of people accept/like to the new crop lines

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

# of people adopted the new recipes in their daily diets

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Other (Limitations of funds and help in the field.)

Brief Explanation

The field experiments were badly affected by the unfavorable conditions in the field. Moreover, growing experiental vegetables in the field requires intensive management operations such as weed control and irrigation done manually. During the summer growing season, enough hand-laborers were not available, and thus many of plants were killed by excessive heat, drought, and insect pests.

Phytochemical analyses and functional properties evaluation of the specialty vegetables could not be possible due to unavailability of appropriate collaborative partners. However, efforts are being made to run the analyses locally but speed is very slow and results are yet to be accomplished.

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Small Farm Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants				
213	Weeds Affecting Plants				
301	Reproductive Performance of Animals				
601	Economics of Agricultural Production and Farm Management				
602	Business Management, Finance, and Taxation				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.6	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

2. Brief description of the target audience

The targeted audience for the Small Farm Program include African Americans, Hispanics, Women, and farms with gross farm sales less than $250,000.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: {No Data

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of farmers participating in workshops and farm tours
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of farmers assisted in developing financial plans and or assited in completing USDA loan applications
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of newsletters, fact sheets and news articles produced
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- The number of SDF's identified for the program
  Not reporting on this Output for this Annual Report

Output #5

Output Measure

- The number of USDA programs introduced to farmers
  Not reporting on this Output for this Annual Report

Output #6

Output Measure

- The number of producers assisted in using extension recommended crop and livestock production practices
  Not reporting on this Output for this Annual Report

Output #7

Output Measure

- The number of producer growing or adding alternative crops to their operations
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	The number of dollars recieved (in millions) by program participants from government programs not normally accessed without the assistance of small farm staff
2	The increase (percent change) in farm income as a result of participants adopting alternative crops, adopting new varieties and using improved production techniques as a result of being enrolled in the Small Farm Program
3	The increase in farm income (percent change) as a result of using marketing strategies recommended by Small Farm Program staff
4	The increase (percent change) in yields as a result of implementing land improvement practices recommended by Small Farm Program staff

Outcome #1

1. **Outcome Measures**

The number of dollars recieved (in millions) by program participants from government programs not normally accessed without the assistance of small farm staff

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

The increase (percent change) in farm income as a result of participants adopting alternative crops, adopting new varieties and using improved production techniques as a result of being enrolled in the Small Farm Program

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

The increase in farm income (percent change) as a result of using marketing strategies recommended by Small Farm Program staff

Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

The increase (percent change) in yields as a result of implementing land improvement practices recommended by Small Farm Program staff

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Extension Livestock Management Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals				
303	Genetic Improvement of Animals				
306	Environmental Stress in Animals				
307	Animal Management Systems				
806	Youth Development				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.0	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

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.

2. Brief description of the target audience

Livestock producers. 4-H and FFA youth.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: {No Data

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- 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.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	The desired outcome is increased knowledge of livestock production and recommended management practices. The results of imcreased knowledge about livestock production and recommended management practices should result in better managed herds and more productive herds.

Outcome #1

1. **Outcome Measures**

The desired outcome is increased knowledge of livestock production and recommended management practices. The results of imcreased knowledge about livestock production and recommended management practices should result in better managed herds and more productive herds.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Value Added Products

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies		25%		25%
502	New and Improved Food Products		25%		25%
503	Quality Maintenance in Storing and Marketing Food Products		25%		25%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins		25%		25%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.3	0.0	0.7
Actual	0.0	0.3	0.0	0.7

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

2. Brief description of the target audience

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	15	15	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Three abstracts and three presentations at the scientific annual meetings. Three peer reviewed publications. Three presentations and/or workshops to farmers.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase number of small farmers and producers who adopt UAPB's Fresh-Cut Processing Technology and utilize it for their fresh-cut process. The target of 40 was to high. 10 is a better target.

Outcome #1

1. **Outcome Measures**

Increase number of small farmers and producers who adopt UAPB's Fresh-Cut Processing Technology and utilize it for their fresh-cut process. The target of 40 was to high. 10 is a better target.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Agricultural Policy

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
610	Domestic Policy Analysis				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	0.4
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

Survey of 250-300 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.

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: {No Data

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of published journal articles on project results and analysis that are distributed to farmers.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of participants at professional conference presentations on project results and analysis.
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of participants at other forums when presentations of project results and analysis are given.
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of participants at stakeholder meetings and interest group forums on project results and analysis.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Changes in production and consumption behavior of minority and limited-resource farmers in response to greater awareness of agricultural policy.
2	Increased participation of minority and limited-resource farmers in agricultural programs.
3	Increased acess to credit and other programs by minority and limited-resource farmers.

Outcome #1

1. **Outcome Measures**

Changes in production and consumption behavior of minority and limited-resource farmers in response to greater awareness of agricultural policy.

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Increased participation of minority and limited-resource farmers in agricultural programs.

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

Increased acess to credit and other programs by minority and limited-resource farmers.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Breeding and Biotechnology

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms				
202	Plant Genetic Resources				
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants				
211	Insects, Mites, and Other Arthropods Affecting Plants				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	1.5
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

2. Brief description of the target audience

Small-farm, limited resource farmers

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: {No Data

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Production of improved cowpea cultivars that resist biotic and abiotic stresses. Publications in reviewed journals.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Establishment of plant regeneration system for different cowpea cultivars
2	Development of transgenic protocol
3	Identification of cultivars for breeding cowpeas with improved yield.
4	Long-term outcome measures are the production of disease and insect-resistant, high yielding cowpeas

Outcome #1

1. **Outcome Measures**

   Establishment of plant regeneration system for different cowpea cultivars

   Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

   Development of transgenic protocol

   Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

   Identification of cultivars for breeding cowpeas with improved yield.

   Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

   Long-term outcome measures are the production of disease and insect-resistant, high yielding cowpeas

   Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Improving Hatchery Production Efficiency

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals		80%		80%
307	Animal Management Systems		20%		20%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.3	0.0	0.5
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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-define 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

2. Brief description of the target audience

•Catfish farmers throughout Arkansas

• County Extension agents Hybrid striped bass fingerling producers Hybrid striped bass grow-out facility operators

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	22	300	6	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

● Number of Abstracts

Year	Actual
2010	11

Output #2

Output Measure

- Number of Presentations

Year	Actual
2010	14

Output #3

Output Measure

- Number of Refereed Journal Articles

Year	Actual
2010	1

Output #4

Output Measure

- Number of Popular Articles and Newsletter Articles

Year	Actual
2010	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of Scientists and Producers That Learned What We Know
2	Number of Scientists and Producers that Use What We Know
3	Percent of Increase in Hybrid Striped Bass Fingerlings Produced in Arkansas
4	Number of Arkansans Gaining Access to Hybrid Catfish Information
5	Number of Arkansans Adopting Hybrid Catfish Production
6	Number of Arkansans Increasing Efficiency, Profitability Through Hybrid Catfish Production

Outcome #1

1. Outcome Measures

Number of Scientists and Producers That Learned What We Know

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	30	114

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Examinations of artificial spawning practices. Catfish producers in the state of Arkansas are interested in producing hybrid catfish. This practice requires a novel approach to spawning catfish and the integration of experimental data into practical approaches for the farmer.
Goldfish producers desire more control over breeding lineages because certain characteristics bring higher market value.

What has been done
Ongoing collaborations and planning of future projects with USDA laboratories in Stoneville Mississippi and Stuttgart Arkansas continue. Three presentations were delivered by graduate student Nick Barkowski over the previous 12 months describing research examining hybrid striped bass culture. On going collaborations with Baxter Land Company in 20910 tested three forms of spawning aides catfish pituitary, carp pituitary, and LHRH to induce artificial spawning to produce hybrid catfish. Examinations of a system of passive grading of female catfish broodstock to select those ready for artificial spawning were continued. Graduate student Mini Jose, defended her MS thesis describing the use of spawning aids to the INAD permit holder, the USFWS.
One demonstration of induced spawning, using McDonald jars was conducted.

Results
Field trials of induction of artificial spawning techniques continue at Baxter Land Company. The primary tests consist of evaluation of different compounds to induce artificial spawning. Tests in 2010 consisted of evaluations of carp pituitary extracts, LHRHa, and catfish pituitary; overall rates for these fish were 86%, 80% and 86%, respectively. A general improvement in ovulation rates for LHRAa fish has been observed over the years of testing at Baxter Land Company, however the time between the resolving dose and ovulation is more variable than pituitary extracts. This latter

feature imposes some difficulties planning for personnel but comments from the farmer/hatchery manager provide some anecdotal evidence that there may be a difference in egg quality between pituitary extracts and LHRHa. This topic will be examined further in future studies. Evaluations at Baxter Land Company have been performed since 2006. During 2006 the averae ovulation rate over the spawning season was 51% versus 86% in 2010 illustrating a general improvement in spawning success across this five year period. Continued improvements are needed in egg incubation and the efficiency of broodstock selection.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #2

1. Outcome Measures

Number of Scientists and Producers that Use What We Know

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	15	14

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Artificial spawning of channel catfish

What has been done
Baxter Land Company currently is the only Arkansas fingerling producer investing capital and energy in the development of artificial spawning practices for the production of hybrid catfish.

Results
One goldfish producer continues major investment in improved hatchery production through induced spawning.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
307	Animal Management Systems

Outcome #3

1. Outcome Measures

Percent of Increase in Hybrid Striped Bass Fingerlings Produced in Arkansas

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #4

1. Outcome Measures

Number of Arkansans Gaining Access to Hybrid Catfish Information

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	60	110

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Artificial spawning of channel catfish

What has been done
UAPB personnel and personnel at Baxter Land Company continue to develop approaches to the production of hybrid fry

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #5

1. Outcome Measures

Number of Arkansans Adopting Hybrid Catfish Production

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	7	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Artificial spawning of channel catfish

What has been done
One fingerling producer, the Baxter Land Company, in Arkansas has invested significant capital and energy into the production of hybrid catfish. Numerous farmers express an interest in rearing hybrid catfish and current supply does not meet the regional demand.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #6

1. Outcome Measures

Number of Arkansans Increasing Efficiency, Profitability Through Hybrid Catfish Production

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	7	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Improving Disease Status for Baitfish and Catfish Production and Marketing

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
307	Animal Management Systems		15%		15%
311	Animal Diseases		35%		35%
312	External Parasites and Pests of Animals		25%		25%
313	Internal Parasites in Animals		25%		25%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.2	0.0	0.3
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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.

2. Brief description of the target audience

Commercial baitfish and catfish producers

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of publications
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of presentations
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of experiments and field trials of treatments for fish parasite and parasite vectors conducted on farms
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percent of Arkansas bait and ornamental fish production farms participating in the State certification program
2	Number of farms that have attempted eradication procedures
3	Number of major farms adopting treatments
4	Number of farmers helped with catfish disease cases
5	Number of catfish ponds sampled for trematodes
6	Number of educational meetings conducted to assist farmers with trematode detection and control
7	Number of commercial Arkansas baitfish farmer learning about Extension recommendations and program results
8	Number of commercial Arkansas catfish farmers adopting Extension recommendations
9	Number of commercial Arkansas catfish farmers increasing efficiency and profitability

Outcome #1

1. **Outcome Measures**

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

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Number of farms that have attempted eradication procedures

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

Number of major farms adopting treatments

Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

Number of farmers helped with catfish disease cases

Not Reporting on this Outcome Measure

Outcome #5

1. **Outcome Measures**

Number of catfish ponds sampled for trematodes

Not Reporting on this Outcome Measure

Outcome #6

1. **Outcome Measures**

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

Not Reporting on this Outcome Measure

Outcome #7

1. **Outcome Measures**

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

Not Reporting on this Outcome Measure

Outcome #8

1. **Outcome Measures**

Number of commercial Arkansas catfish farmers adopting Extension recommendations

Not Reporting on this Outcome Measure

Outcome #9

1. **Outcome Measures**

Number of commercial Arkansas catfish farmers increasing efficiency and profitability

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 15

1. Name of the Planned Program

Improving Management Techniques for Baitfish

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals		45%		45%
307	Animal Management Systems		45%		45%
308	Improved Animal Products (Before Harvest)		10%		10%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.7	0.0	0.3
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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. Conduct field trial and

give presentations

2. Brief description of the target audience

Commercial baitfish producers

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	836	3640	80	100

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Peer Reviewed Journal Articles

Year	Actual
2010	3

Output #2

Output Measure

- Number of Abstracts

Year	Actual
2010	7

Output #3

Output Measure

- Number of Articles in Producer Trade Magazines

Year	Actual
2010	0

Output #4

Output Measure

- Number of Fact Sheets and Newsletters

Year	Actual
2010	2

Output #5

Output Measure

- Number of Presentations

Year	Actual
2010	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers who learn project results
2	Number of producers willing to test successful ingredients or feeding strategies on a commercial scale
3	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 #1

1. Outcome Measures

Number of producers who learn project results

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1	97

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Profits in baitfish farming increase with yield, as the fixed costs of production are relatively high. With the traditional spawning-rearing pond method of fathead minnow production, yields are relatively low, in the range of 250-450 lb/acre. The demand for fathead minnows has increased, but yields remain relatively low.
Improving management techniques allows baitfish producers to remain competitive and profitable.

What has been done
A series of research studies have been conducted to develop a new method of fathead minnow production. Eggs are collected from brood ponds, hatched indoors, and resulting fry are stocked into ponds. Fish are fed to satiation and nightly aeration is provided. In addition to a journal article, results have been demonstrated at a field day, presented at producer association meetings, and disseminated in an Extension newsletter.
Field trials, demonstrations, and presentations have all been done.

Results
Results from two years of studies demonstrated that yields of 2,500 to 4,500 lb/acre can be obtained in experimental ponds. Even with the added costs of egg collection and fry production, today's relatively high feed costs and increased expenses for aeration, estimated profits increase dramatically, from $290 - $530/acre to $8,700 - $14,000/acre. Yields from commercial ponds are unlikely to be as high as those obtained in the small, netted experimental ponds, but these studies show the potential for increased profits using this new production method.
Ten baitfish producers increased yields by 5-15%.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Commerical production of baitfish is relatively inefficient. Feed comprises a major part of production costs. Producers are interested in novel diet ingredients and feeding strategies that can improve the profitability of their industries. Baitfish are marketed as live products, so hardiness and resilience must be considered in designing diets and feeding strategies for them.

What has been done
An 8-week feeding trial was conducted with golden shiners in outdoor pools to determine conversion of golden shiners as well as traditional diets with 28- or 32% protein, but at a lower cost. Traditional diets contained porcine meat, bone and blood meal, and alternative diets contained corn gluten feed and no animal protein. Two hundred fish were stocked in each of four replicate 4.1 m3 aerated pools filled with reservoir water. Fish were fed twice daily on weekdays and once daily on weekends at 6-8% body weight. Chlorophyll a was measured twice during the study, and zooplankton was identified and enumerated on a similar schedule.

Results
At harvest, there were no statistical differences in feed intake, weight gain, survival, total yield, or feed conversion among diets. Relative weight was higher in fish fed diets with animal protein (either 28- or 32% protein diets). Additional analysis is in progress to determine whether there were differences in proximate composition of golden shiners among diets. Based on total yield alone, it appears that cheaper (alternative) diets are effective for golden shiner production, but the results were clearly influenced by access to natural foods. In addition, cost-of-grain was lowest in fish fed the traditional 28% protein diet (39 cents/lb), and highest in fish fed the 28% alternative

diet (50 cents/lb). The cost of grain was intermediate for the 32% formulas (42-43 cents/lb). All diets appeared to meet or exceed the essential amino acid and other nutrient requirements of channel catfish based on chemical analysis. The known nutrient requirements of golden shiner are similar. The 28% alternative formula had the highest fiber content (5.6%), which can reduce the availability of other nutrients in the diet and affect conversion efficiency. However, the presence and variability of natural foods in the pools might have masked differences in the quality of the prepared feeds.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #3

1. Outcome Measures

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

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (changing prices of feed ingredients)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 16

1. Name of the Planned Program

Aquaculture Alternatives in Arkansas

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals		10%		10%
307	Animal Management Systems		40%		40%
308	Improved Animal Products (Before Harvest)		10%		10%
311	Animal Diseases		10%		10%
602	Business Management, Finance, and Taxation		10%		10%
603	Market Economics		10%		10%
806	Youth Development		10%		10%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.0	0.0	0.9
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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.

Determine basic nutrient requirements for alternative species such as largemouth bass, and test feed additives (such as prebiotcs) in these species to determine their potential inclusion in practical diets.

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 agents 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.

Data collection for the program is completed. This consisted of two years of weekly and monthly water quality sampling in four commercial catfish farms and three ponds on each farm, followed by the same protocol for four commercial baitfish farms. The program is in its final year, which will be used to analyze and intepret the data for publications and use by extension personnel. A correlation analysis will be used between the ten parameters measured to find relationships. Other analyses will look at the farm management practices to find relationships between water quality and the practices.

2. Brief description of the target audience

County Extension faculty, existing fish farmers and potential farmers.

Youth

The target audience will be catfish and baitfish farmers and researchers of these production systems and associated water quality. Extension personnel will be also targeted to provide suggestions on analyses and presentation/dissemination of results to farmers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	69	164	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	4	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Peer Reviewed Journal Articles

Year	Actual
2010	3

Output #2

Output Measure

- Number of Presentations

Year	Actual
2010	6

Output #3

Output Measure

- Number of Published Abstracts

Year	Actual
2010	5

Output #4

Output Measure

- Number of County Agents using the fishing education modules

Year	Actual
2010	0

Output #5

Output Measure

- Number of teachers participating in aquaculture workshops

Year	Actual
2010	0

Output #6

Output Measure

- Number of tilapia delivered to teachers

Year	Actual
2010	0

Output #7

Output Measure

- Number of teachers using tilapia

Year	Actual
2010	0

Output #8

Output Measure

- Number of teachers receiving aquaculture education newsletter

Year	Actual
2010	0

Output #9

Output Measure

- Number of schools visited annually

Year	Actual
2010	0

Output #10

Output Measure

- Number of students participating in aquaculture events and educational programs

Year	Actual
2010	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of Arkansans adopting sound management practices
2	Number of Arkansans Increasing Efficiency, and Profitability
3	Number of researchers and producers gaining knowledge from results from presentations and publications
4	Number of researchers that will cite results
5	Number of producers that will modify feeding and management
6	Percent decrease in cool weather mortalities and decrease in off-flavor
7	Percent of cool weather plankton-related problems that will decrease
8	Percent of warm weather plankton-related problems that will decrease
9	Number of producers willing to test successful ingredients or feeding strategies on a commerical scale
10	Percent of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry
11	Number of County Extension agents using the aquatic education fishing trailer for youth fishing activities
12	Number of students participating in events related to the aquatic education fishing trailer for youth fishing activities

Outcome #1

1. Outcome Measures

Number of Arkansans adopting sound management practices

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	150	45

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #2

1. Outcome Measures

Number of Arkansans Increasing Efficiency, and Profitability

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	33

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #3

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #4

1. Outcome Measures

Number of researchers that will cite results

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #5

1. Outcome Measures

Number of producers that will modify feeding and management

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #6

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #7

1. Outcome Measures

Percent of cool weather plankton-related problems that will decrease

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #8

1. Outcome Measures

Percent of warm weather plankton-related problems that will decrease

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #9

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	4	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #10

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	75	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #11

1. Outcome Measures

Number of County Extension agents using the aquatic education fishing trailer for youth fishing activities

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	25	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #12

1. Outcome Measures

Number of students participating in events related to the aquatic education fishing trailer for youth fishing activities

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1300	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 17

1. Name of the Planned Program

Improving Largemouth Bass Fishing in the Arkansas River

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
134	Outdoor Recreation		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	0.9
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Creel surveys during 2007-2009 in two pools of the lower Arkansas River

Use of computer simulation modeling to predict the influence of different management scenarios on fishery yield, harvest, and size structure. Scenarios will include the existing 15-inch minimum length limit and no maximum length limit yield

2. Brief description of the target 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.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	45	300	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Abstracts

Year	Actual
2010	5

Output #2

Output Measure

- Number of Presentations

Year	Actual
2010	5

Output #3

Output Measure

- Number of Refereed Journal Articles

Year	Actual
2010	2

Output #4

Output Measure

- Number of Research Reports Submitted to Stakeholders

Year	Actual
2010	0

Output #5

Output Measure

- Number of Non-peer Reviewed Publications

Year	Actual
2010	0

Output #6

Output Measure

- Number of Peer Reviewed Publications

Year	Actual
2010	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	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
2	Percent of AGFC fisheries biologists and managers who use the study results to solve management issues
3	Number of tournament largemouth bass anglers that learned what we know
4	Number of recreational anglers that learned what we know
5	Number of non-agency fisheries biologists that use what we know
6	Percent reduction in complaints to the AGFC regarding largemouth bass in the Arkansas River
7	Percent increase in largemouth bass tournaments on the Arkansas River
8	Number of AGFC personnel that learned what we know
9	Number of non-agency fisheries biologists that learned what we know
10	Number of AGFC personnel that use what we know

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	120	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	47	43

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #3

1. Outcome Measures

Number of tournament largemouth bass anglers that learned what we know

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	30	13

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #4

1. Outcome Measures

Number of recreational anglers that learned what we know

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #5

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	40	22

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #6

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2	12

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #7

1. Outcome Measures

Percent increase in largemouth bass tournaments on the Arkansas River

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	3	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #8

1. Outcome Measures

Number of AGFC personnel that learned what we know

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	30	103

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #9

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	40	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #10

1. Outcome Measures

Number of AGFC personnel that use what we know

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	7	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 18

1. Name of the Planned Program

Water and Environmental Quality

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water				
112	Watershed Protection and Management				
133	Pollution Prevention and Mitigation				
204	Plant Product Quality and Utility (Preharvest)				
403	Waste Disposal, Recycling, and Reuse				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.5	0.0	0.5
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

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.

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: {No Data

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Complete one peer reviewed research article every two years.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- 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.
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Complete one fact sheet regarding water quality, swine waste management or environmental stewardship each year.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	The number of conservation practices utilized by swine farmers as a result of this project is an outcome measure.
2	Increase awareness of environmental issues and policies that pertain to operating small swine farms.

Outcome #1

1. **Outcome Measures**

The number of conservation practices utilized by swine farmers as a result of this project is an outcome measure.

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

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

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 19

1. Name of the Planned Program

Cropping Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
205	Plant Management Systems				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	2.3	0.0	0.5
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

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.

2. Brief description of the target 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.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: {No Data

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- 1. The number of site visits by farmers
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- 2. The number of participants that attend field days
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- 3. Number of fact sheets developed
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- 4. Annual Reports
  Not reporting on this Output for this Annual Report

Output #5

Output Measure

- 5. Number of presentations made at meetings for interested groups
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	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.
2	Long term outcome will be measured by the number of LRFs and SDFs that adopt 1 or more BMP

Outcome #1

1. **Outcome Measures**

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.

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Long term outcome will be measured by the number of LRFs and SDFs that adopt 1 or more BMP

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 20

1. Name of the Planned Program

Farm Pond and Community Fishing Pond Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
134	Outdoor Recreation		30%		30%
307	Animal Management Systems		70%		70%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.8	0.0	0.0
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct online and hands-on in-service training for Extension Educators

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

Conduct field trials

Conduct method demonstrations

Give presentations

2. Brief description of the target audience

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

County Extension Agents, pond managers, natural resource managers

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1158	7500	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of project annual and final reports

Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of presentations and scientific meetings

Year	Actual
2010	4

Output #3

Output Measure

- Number of published abstracts

Year	Actual
2010	2

Output #4

Output Measure

- Number of refereed journal articles

Year	Actual
2010	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of research recommendations transferred to AGFC staff
2	Increase in fishing license sales in cities with AGFC programs
3	Increase in ponds that are designed, stocked, and managed correctly
4	Reduced number of pond problems
5	Percent increase in contacts rearing hybrid striped bass
6	Percent increase in sales for sport fishing
7	Number of farm pond owners implementing improved weed control
8	Number of farm pond owners learning how to control aquatic weeds
9	Number of farm pond owners experiencing fewer problems with aquatic weeds

Outcome #1

1. Outcome Measures

Number of research recommendations transferred to AGFC staff

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	4	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #2

1. Outcome Measures

Increase in fishing license sales in cities with AGFC programs

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #3

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	185

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #4

1. Outcome Measures

Reduced number of pond problems

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	25	410

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #5

1. Outcome Measures

Percent increase in contacts rearing hybrid striped bass

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #6

1. Outcome Measures

Percent increase in sales for sport fishing

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #7

1. Outcome Measures

Number of farm pond owners implementing improved weed control

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	30	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #8

1. Outcome Measures

Number of farm pond owners learning how to control aquatic weeds

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #9

1. Outcome Measures

Number of farm pond owners experiencing fewer problems with aquatic weeds

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	20	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 21

1. Name of the Planned Program

1890 Family and Child Development Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being		45%		0%
806	Youth Development		55%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.1	0.0	0.0
Actual	0.0	0.7	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Two focused programs were addressed in the 1890 Family and Child Development Program. These included Teens on the Go newsletter series, and the Young Scholars Program. The Teens on the Go newsletter, in its 32nd year, was developed for students in grades 7-12. The Young Scholars Program, in its 14th year, was implemented in a housing project in Monroe County.The children, ages 6-15, met 5-

days a week, year-long in an after-school program that emphasized math and science skills using human sciences and agriculture subject matter. Parents enrolled in the Young Scholars Program met weekly and focued not only on the curriculum for the children but also on parenting education, stress management, coping and job-related skills, family relationships, and eocnomic- and self-sufficiency skills. In FY 2010 the six issues of Teens on the Go Included: 1) Break that Bad Habit; 2) Coping with Grief and Loss: When Your World Changes; 3) HIV and AIDS; 4) The Body Robbers; 5) One-night stand or true love? Looking at Love; and 6) Getting Along: Defusing Difficult Situations.

2. Brief description of the target audience

The target audiences in the 1890 Family and Child Development focused programs included: Teenagers in grades 7-12 for the newsletter, Teens on the Go and parents and their children who live in a housing project in Monroe County, located in the Delta Region of the state, for the Young Scholars Program. The children enrolled in the program are referred to as Young Scholars.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	58	156	86	57449

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- We will provide math and science workshops for children in the Young Scholars Program.

Year **Actual**

2010	86

Output #2

Output Measure

- Parents will receive training in parenting, stress management, money mangement, child development, and job-related and coping skills.

Year	Actual
2010	58

Output #3

Output Measure

- Write 6 issues of Teens on the Go for students in grades 7-12.

Year	Actual
2010	6

Output #4

Output Measure

- Thirty-five percent of children enrolled in the Young Scholars program had an increase in school performance. Forty percent of parents reported being able to meet financial obligations of their families.

Year	Actual
2010	55

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Forty-five percent of children in the Young Scholars Program will have an increase in school performance
2	Thirty percent of families will report being able to meet the financial obligations of their families.
3	Total contact with Arkansas teens will be 10000 through Teens on the Go.

Outcome #1

1. Outcome Measures

Forty-five percent of children in the Young Scholars Program will have an increase in school performance

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	55	55

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
School officials continue to be concerned about the increased number of poor children who experience difficulty in achieving in such areas as reading, math and science. Experts cite inadequate readiness for school as being one factor that causes children to lag behind more previliged children.

What has been done
A Young Scholars Program was implemented 14 years ago to address these issues. The program focuses on math and science skills through using human sciences and agriculture subject matter. Special workshops and summer day camp were provided for children enrolled in the program as well as other children in the housing complex to strengthen math and science skills.

Results
Forty-five parents and fifty-five children are enrolled in the program. The parents meet in weekly group sessions. They report using knowledge gained to control debt and stretch the family's income. Published honor roll lists, conferences with teachers and parents confirm the progress of the children enrolled in the program. All students enrolled in the program passed the state bench-mark exams.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development

Outcome #2

1. Outcome Measures

Thirty percent of families will report being able to meet the financial obligations of their families.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	45	58

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
As the economy shifts many low-income, minority families experience difficulty in meeting their financial obligations. As a result a great number of children suffer because many of their physical and emotional needs are not met in the family.

What has been done
Parents enrolled in the Young Scholars program meet in small groups weekly to focus not only on the curriculum for the children but also on parent education, stress management, coping and job-related skills, family relationships, and economic-and self-sufficiency skills.

Results
Families self-report that they are better able to meet the financial obligations of their families. All parents reported being food secured. All families indicated having food last through the end of the month.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development

Outcome #3

1. Outcome Measures

Total contact with Arkansas teens will be 10000 through Teens on the Go.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10000	57449

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
More than 7 million children in this country are growing up in poor communities that put them at risk of dropping out of school, becoming teen parents, using drugs, being involved in violence, and being incarcerated before they are old enough to vote. They are the youth who will reach adulthood unprepared to work, parent or contribute to society.

What has been done
Since 1978 a newsletter series, Teens on the Go, has been writtern for teenagers in Arkansas in grades 7-12. Its purpose is to help teens make better decisions regarding critical issues that impact their lives. Teenagers received six issues of the newsletter that focused on enhancing self-esteem, relationships, sexuality and drug abuse prevention.

Results
Teenagers in 57 (out of 75) counties received the newsletter in FY 2010. Total contact with teens was 57,449. They reported that the newsletter helped them to make better decisions. One student said: "Teens on the Go are great issues. They make you rethink about things that really matter. They helped me to make better decisions and to stand up for what I truly believe in. They helped me to respect myself."

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The economy continues to shift. Some families experienced extreme hard times. Some lost jobs. These situations negatively impacted the particapion level of the program.

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

In FY 2010 students in 57 (out of 75) counties received Teens on the Go. Total contacts with teens were 57,449. Students indicated that the newsletter helped them to make better decisions. One student said: "Teens on the Go are great issues. They make you rethink about things that really matter. They helped me make better decisions and stand up for what I truly believe in.They have helped me learn to respect myself." All children enrolled in the Young Scholars Program passed the required bench-mark exams in school. An increased number of parents reported controlling debt as an achievable goal.

Key Items of Evaluation

Number of total contacts with teens in grades 7-12 through the newsletter, Teens on the Go and progress of children and parents enrolled in the Young Scholars Program.

V(A). Planned Program (Summary)

Program # 22

1. Name of the Planned Program

1890 Arkansas Ag Adventures - Agricultural Awareness

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.3	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activities include field days at the UAPB Small Farm Outreach and Water Management Center, camps at the Arkansas 4-H Center, exhibits and displays at the educational fairs and conferences, and community and classroom workshops in multiple locations throughout the sate.

2. Brief description of the target 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. In addition to school children, large number of home school students participate in the program and activities of the center

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2010
Actual: {No Data

Patents listed
{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Particpants in the 1890 Arkansas Ag Adventures workshops and other non-formal educational programs
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of groups that participate in farm field day
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	To increase the understanding of agriculture and its benefits to the general public.
2	The number of youth that choose agriculture as a career or course of study in college.

Outcome #1

1. **Outcome Measures**

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

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

The number of youth that choose agriculture as a career or course of study in college.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 23

1. Name of the Planned Program

Family Resource Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management				
	Total				

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.6	0.0	0.0
Actual	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

The 1890 Family Resource Management Program will be conducted through a variety of programs and events to reach the target audiences. Education programs (workshops and siminars) will be conducted; tailored publications for low-literacy individuals including fact sheets, newsletters, news articles will be written and published; media including print, radio, university TV and university website and other available technology will be used to provide information in a user friendly format. Additionally, the program

will participate in events and conferences by developing displays and presentations.

2. Brief description of the target audience

The 1890 Family Resource Management Program targets young adults, parents, families, farm families, faith-based and community based organizations and is focused particularly on limited resouces audiences and small land and property owners.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
Actual: {No Data

Patents listed
{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	5	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- The number of participants will participating in 10 financial management workshops; Not reporting on this Output for this Annual Report

Output #2

Output Measure

- The number of financial management presentations to community and faith-based organizations;

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- The number of articles written in special publications addressing the needs of limited resource farms and families in the family resource area
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Forty percent of the 800 program participants will gain knowledge in financial resource management and planning.
2	Ten percent of the program participants will change one or more positive financial behaviors that will be result in improved long-term financial well being.

Outcome #1

1. **Outcome Measures**

   Forty percent of the 800 program participants will gain knowledge in financial resource management and planning.

   Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

   Ten percent of the program participants will change one or more positive financial behaviors that will be result in improved long-term financial well being.

   Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 24

1. Name of the Planned Program

Global Food Security and Hunger

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms		5%		13%
202	Plant Genetic Resources		5%		13%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants		14%		10%
205	Plant Management Systems		15%		7%
211	Insects, Mites, and Other Arthropods Affecting Plants		6%		0%
213	Weeds Affecting Plants		10%		0%
301	Reproductive Performance of Animals		5%		5%
302	Nutrient Utilization in Animals		5%		13%
307	Animal Management Systems		0%		10%
311	Animal Diseases		12%		7%
601	Economics of Agricultural Production and Farm Management		6%		10%
602	Business Management, Finance, and Taxation		12%		0%
603	Market Economics		0%		5%
610	Domestic Policy Analysis		5%		7%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	0.0	9.4	0.0	7.7

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
0	1059230	0	1836468
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	1116660	0	1481087
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The activities for the priority area "Global Food Security and Hunger" for the University of Arkansas at Pine Bluff (UAPB) are:

Surveys were sent to 60 farmers who participate in UAPB's 2501 Small Farm Project. Thirty surveys were returned and the data is being analyzed.

The small farm staff provided assistance with 60 loan application packages for USDA programs, served more than 500Socially Disadvantaged Producers (SDPs) in the program, and recommended that 125 SDP's use Extension practices for crops and livestock production.

Research studies that use crop byproducts (brewers grade rice, cotton seed meal, cotton hull etc.) to mix rations that meet the nutritional requirements of swine and goats continued during this reporting period.

The horticulture area conducted 12 training sessions (including a 15 day training trip to the Dominican Republic); 465 participants received training including County Extension agents and associates, socially-disadvantaged farmers, limited-resource farmers, small-scale farmers and master gardeners.

Five genotypes of Gladiolus bulbs (Red Flair, Ice Cap, Plum Tart, Pink Event, and Violet) and twelve varieties or roses (Tropicana, Peace, Iceberg, Cinco de Mayo, Julia Child, Living Easy, Europena, Strike it Rich, Let Freedom Ring, Double Delight, Plamengarten Frankfurt and Wild Blue Yonder were evaluated to determine their suitable for production in the Southeast Arkansas region.

Summer crops (sweet potato, squash, cowpea, and sweet corn) and fall crops (mustard and turnip) were grown in a continuous cropping system to determine disease and insect pressures that are likely to evolve from the system.

The biotechnology area has established an efficient regeneration system for the cowpea (southern pea) through shoot meristems tissue by using a gene gun and a binary vector (pTF102).

The breeding area evaluated two experimental lines of southern peas (UABP-1 and UAPB-2) for yield as compared to four commercially established varieties (Top Pick, Early Scarlet, LA Quick Pick and Top Pick Cream) that are grown in Arkansas.

A field day was held on August 26, 1010 with 156 individuals attending. Fifteen tour stops were included with a variety of topics being covered ranging from alternative cropping systems to a farmstead museum.

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 a 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.

Determine basic nutrient requirements for alternative species such as largemouth bass, and test feed additives (such as prebiotics) in these species to determine their potential inclusion in practical diets.

Conduct tank feeding trials, conduct field trials, conduct method demonstrations, publish results, and give presentations.

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, and improve methods to eradicate pathogens from afflicted farms.

A series of studies are being conducted on the components of an egg collection, removal and incubation system, and on new ingredients and strategies for feeding baitfish. Conduct field trial and give presentations.

2. Brief description of the target audience

The primary audience for this program consists of Small and Socially Disadvantaged Farmers (SSDFs). Small Farms as defined by the National Commission on Small Farms are those farms with $250,000 in gross sales or less while Socially Disadvantaged Farmers are those who have been subjected to racial or ethnic prejudices because of their identity as a member of a group without regard to their individual qualities. Identified groups include: African Americans, Hispanics, Asians, American Indians or Alaska Natives, and Native Hawaiians or other Pacific Islanders. However, UAPB does not discriminate against any individuals.

Commercial baitfish and catfish producers, catfish farmers througout Arkansas, County Extension agents, hybrid striped bass fingerling producers, hybrid striped bass grow-out facility operators, grocery store managers, consumers, interested potential producers, and commercial bankers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	9000	25740	1000	200

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	2	8	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- The number of research studies and demonstrations conducted

Year	Actual
2010	8

Output #2

Output Measure

- The number of farmers provided assistance in applying for USDA programs

Year	Actual
2010	60

Output #3

Output Measure

- The number of newsletters, fact sheets, etc. distributed

Year	Actual
2010	2000

Output #4

Output Measure

- The number of newspaper articles published

Year	Actual
2010	20

Output #5

Output Measure

- The number of field days held

Year	Actual
2010	1

Output #6

Output Measure

- The number of presentations made

Year	Actual
2010	65

Output #7

Output Measure

- The number of workshops and training sessions conducted

Year	Actual
2010	15

Output #8

Output Measure

- Number of peer reviewed journal articles

Year	Actual
2010	6

Output #9

Output Measure

- Number of abstracts published

Year	Actual
2010	51

Output #10

Output Measure

- Number of refereed journal articles

Year	Actual
2010	10

Output #11

Output Measure

- Number of trade magazine articles

Year	Actual
2010	8

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased economic opportunity and profitability for SSDF
2	An increase in the number of SSDF that adopt one or more Best Management Practices for crop production
3	Enhanced crop diversity on SSDF to increase profitability
4	Increase the number of SSDF that adopt one or more Best Management Practices for livestock production
5	Potential increase of fathead minnow yields and profits
6	Test and technical assistance provided for shipping and water quality
7	Monitoring ponds for loss prevention
8	Samples submitted to reduce losses due to catfish diseases
9	Pond acres obtaining adequate financing
10	Producers considering aquaculture alternatives
11	Number of diagnostic fish health and biosecurity cases handled
12	Percent replacement of improved feeding strategies of alternate species
13	Scientists and soybean and catfish producers requesting nutrition and feeding strategies to improve production efficiency and product quality of catfish
14	Number of stakeholders using the catfish model
15	Number of catfish farmers in Arkansas using survey results

Outcome #1

1. Outcome Measures

Increased economic opportunity and profitability for SSDF

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Small and Socially Disadvantaged Farmers (SSDF,) especially African American Farmers have trouble financing their farming enterprises. Many have a history of mistrust with USDA Agencies, especially the Loan Division of the Farm service Agency (FSA) which is the agency of last resort for many SSDF. The mistrust is evidenced by the Class Action Lawsuits (African American, Hispanic, Indians, and women) that were filed against USDA. Consequently, many SSDF are reluctant to go into FSA Offices to request loan applications. Also, many get confused when completing the application forms; and others do not apply because they feel that it is too much work.

What has been done
Extension associates (EA) were placed in five areas of the state with high populations of SSDF. The EA(s) helped SSDF complete their loan application packages; assisted them in developing feasible financial plans; and helped them collect the financial records required to complete other forms in the application package.

Results
The EA helped 20 farmers obtain $3.4 million in operating funds; and assisted five farmers in obtaining $1.3 million in farm ownership loans from USDA. Two young farmers were assisted in obtaining $10,000 in youth loans from USDA. Also, one farmer was assisted in obtaining $45,000 from a local bank while three other farmers were assisted in obtaining $740,000 in supplies from local farm vendors. These funds allowed producers to operate during this period.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation

Outcome #2

1. Outcome Measures

An increase in the number of SSDF that adopt one or more Best Management Practices for crop production

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Small and Socially Disadvantaged Farmers (SSDF) operate a large percentage of unimproved crop land. A large portion of the land is not irrigated and some of the land that is irrigated could be improved with land leveling. A substantial portion of the land has been farmed for many years; the soils have become very acid; and lime needs to be applied to the soil to make nutrients more available. These conditions have reduced the yield potential of certain fields operated by SSDF. This results in lost income.

What has been done
The UAPB extension associates have worked with NRCS to educate SSDF about USDA Conservation Programs that provide 90 percent cost share assistance to SDF to improve cropland. The EA also educated producers about the very acid soils in Arkansas and the need to take soil test to identify fields that needed lime to improve productivity.

Results

The EA discussed the conservation programs with many farmers and 10 of them obtained approximately $700,000 in Environmental Quality Incentive Program (EQIP) funds. Most of these funds will be used to level land and install irrigation wells. Approximately 1200 acres of land will be improved (land leveling) with these funds. The EA also assisted approximately 50 producers in taking soil test to determine if their fields need lime. Twenty five fields or 1000 acres were identified as needing lime to improve productivity. Plans are underway to apply lime to the fields.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
213	Weeds Affecting Plants
601	Economics of Agricultural Production and Farm Management

Outcome #3

1. Outcome Measures

Enhanced crop diversity on SSDF to increase profitability

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Most small and Socially Disadvantaged Farmers (SSDF) have a limited amount of acres available for crop and/or livestock production. Therefore, yields or price increases do little to provide additional farm income. The profitability of these farms can be increased by marketing and growing high cash value crops such as vegetables. For example, the income from one acre of southern peas (cowpeas) can be equivalent to the income from 10 acres of non-irrigated soybeans.
Cut flower (rose and gladiolus) production could be a profitable agribusiness in the Southeast Arkansas Delta.

What has been done
The Extension associate (EA) worked with several row crop farmers to help them diversify their operation by adding vegetables on their row crop (soybeans and wheat) farms. The EA provided production and marketing assistance to these farmers. Also, Five selected genotypes of Gladiolus bulbs and twelve varieties of roses were evaluated to determine their adaptability to southeastern Arkansas conditions.

Results
The five farmers in Jefferson County were able to sell all of their vegetables. As a result of their success in selling vegetables in 2010, these farmers are planning to increase the acreage of vegetables on their farm operations during 2011. The Gladiolus varieties Violet and Plum Tart produced the highest number, and large sized flowers. These flowers could be sold during June and July. The rose cultivars, Let Freedom Ring, Tropicana and Living Easy seemed to offer the most promise for commercial sale from mid April to mid June.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
601	Economics of Agricultural Production and Farm Management

Outcome #4

1. Outcome Measures

Increase the number of SSDF that adopt one or more Best Management Practices for livestock production

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small and limited-resource livestock farmers are seeking ways to enhance the profitability of their livestock operations. The high cost of feed provides many challenges to these producers. Thus, the farmers need research-based information to minimize feeding expenses.

What has been done
Two workshops with 25 farmers attending, one field day with about 40 producers attending, and 25 farm visits have been used to disseminate results from swine and goat research projects at the university.

Results
Information on simple feed mixing techniques using some crop by product such as brewers-grade rice and cotton seed hulls is available to farmers. Rations are formulated to provide nutrients necessary to support increased animal performance. Six swine and five goat producers are implementing some of these recommendations. They have reported a substantial reduction in feed costs without compromising animal performance.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems

Outcome #5

1. Outcome Measures

Potential increase of fathead minnow yields and profits

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Profits in baitfish farming increase with yield, as the fixed costs of production are relatively high.

With the traditional spawning-rearing pond method of fathead minnow production, yields are relatively low, in the range of 250 - 450 lb/acre. The demand for fathead minnows has increased, but yields remain relatively low.

What has been done
A series of research studies have been conducted to develop a new method of fathead minnow production. Eggs are collected from brood ponds, hatched indoors, and resulting fry are stocked into ponds. Fish are fed to satiation and nightly aeration is provided. In addition to a journal article, results have been demonstrated at a field day, presented at producer association meetings, and disseminated in an Extension newsletter.

Results
Results from two years of studies demonstrated that yields of 2,500 to 4,500 lb/acre can be obtained in experimental ponds. Even with the added costs of egg collection and fry production, today's relatively high feed costs and increased expenses for aeration, estimated profits increase dramatically, from $290 - $530/acre to $8,700 - $14,000/acre. Yields from commercial ponds are unlikely to be as high as those obtained in the small, netted experimental ponds, but these studies show the potential for increased profits using the new production method.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
307	Animal Management Systems

Outcome #6

1. Outcome Measures

Test and technical assistance provided for shipping and water quality

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	1635

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Detection of diseases in farmed raised fish in not as readily visible as in other terrestrial livestock species. Fish are raised in aquatic environments and are not easily visible to the farmer. Proper

diagnosis of fish diseases prevents catastrophic losses to the producer. Healthy fish used as foodfish or baitfish ensures the safety of seafood for human consumption and prevents the spread of diseases to other aquatic systems.

What has been done
The UAPB Fish Health Diagnostic lab in Lonoke, AR, conducts routine health inspections, issues health certificates for fish being shipped to other states and countries, conducts inspections for the baitfish certification program in Arkansas and analyzes water quality.

Results
In 2010, personnel at the lab conducted 540 disease cases, 117 water quality cases, and 26 health certifications for interstate or international transport of live fish. I also provided technical assistance to clientele through more than 42 farm visits, 855 phone consultations, and 55 office visits. The certifications obtained by farmers, enables the shipment of more than $100,000 of fish.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
311	Animal Diseases

Outcome #7

1. Outcome Measures

Monitoring ponds for loss prevention

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	288

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Throughout the year, when water temperatures are between 70 and 75 degrees Celsius, golden shiner Notemigonus crysoleucas stocks seem to disappear from ponds that have been in production for two or more years. Fish losses from these ponds can range from 40% - 80%. Investigations into the possible causes for this phenomenon have lead to the possibility that hydrogen sulfide may play a role. Previous laboratory studies have shown that hydrogen sulfide at 500 ppb was toxic to golden shiners. However, these laboratory studies were conducted at

neutral pH values and temperatures. Since the toxic form of hydrogen sulfide is more abundant at lower pH values, a study conducted in ponds with fluctuating pH and temperatures was conducted.

What has been done
For the past two years, we have monitored 12 ponds containing golden shiners on a commercial baitfish farm. We did monthly monitoring of hydrogen sulfide concentrations in the top 2 inches of sediment and the bottom 12 inches of pond water.

Results
The ponds that had high hydrogen sulfide in the water also had high incidences of disappearing of fish. Use of 2-6 ppm potassium permanganate can reduce the hydrogen sulfide to a non-toxic form. This technique will save producers $500,000.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #8

1. Outcome Measures

Samples submitted to reduce losses due to catfish diseases

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	767

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Annually, Arkansas catfish producers lose over $1 million worth of catfish due to catfish diseases. Timely, accurate disease diagnoses can save the producer time plus money. Additionally, new problems are beginning to emerge. One such is the catfish trematode. Research was conducted state wide for two years to determine the extent of this problem.

What has been done
Approximately 767 samples were submitted to the disease diagnostic laboratory for diagnosis. These samples were processed and appropriate treatment recommendations were made to the

producers. During the past year, the virulent strain of aeromonas bacteria appeared on two catfish farms in Southwest Arkansas. Previously, this particular aeromonas strain had only been reported on farms in Alabama. Quick action by the fish health specialists contained the disease on those two farms and prevented the spread of the disease to other farms in that area and across the state.

Results
The diagnostic service saved the producer approximately $1.0 million versus not treating the problems. The aeromonas strain has been particularly devastating on infected farms in Alabama, with producers reporting losses of nearly $3 million in 2009. Our rapid response to the problem and the implementation of on the farm biosecurity protocols prevented the spread of the disease. Ponds that were infected by the disease in that area lost an estimated $12,000 worth of fish. If those losses were projected across all the ponds inh that area, the loss could have been as high as $1.2 million worth of fish.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
311	Animal Diseases

Outcome #9

1. Outcome Measures

Pond acres obtaining adequate financing

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	700

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many marketing constraints affect the catfish industry at this time. One such constraint is obtaining adequate financing for a fish farm operation. Additionally, lenders are unsure if adequate fish stock is present on existing farms to continue financing the operation.

What has been done

Inventories were conducted on five fish farming operations. Result showed inventories in the ponds were adequate for growing out a full pond of fish.

Results
The producers were able to obtain adequate financing for their operations, representing 700 acres. They should be able to produce 3.1 million pouunds of fish on those operations valued at $2.6 million.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #10

1. Outcome Measures

Producers considering aquaculture alternatives

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	12

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Acreage devoted to catfish production in Arkansas has seen a significant reduction during the past years. With producers going out of business, dozens of ponds are now available for other uses. Some of the uses include conversion back to "row crop" operation. With change to row crops, water quality has become an issue, can the crop be grown in the high salinity waters which are characteristic of Chicot County, Arkansas.

What has been done
Twelve producers explored the possibility of converting ponds back to row crop operations. Water quality needed to be analyzed to make the final decision. If too much salt was present in water, then rice production could be a problem in those ponds.

Results
Water analysis revealed that rice could be grown in most of those ponds, 1,000 acres plus. For ponds in which the water was too salty, then salt resistant crops such as milo were suggested as

potential crops. The rice yields did well for the most part. However, there were some issues with "lodging", due to over-fertility of the soil caused by a build up of catfishy waste.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #11

1. Outcome Measures

Number of diagnostic fish health and biosecurity cases handled

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	2000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Arkansas aquaculture is reliant on the movement of healthy live animals across state lines. Disease outbreaks on fish farms can lead to direct financial losses and regulatory impacts including quarantine and movement restrictions. In order to prevent these problems, farms must practice good biosecurity and have access to quality diagnostic and inspection services.

What has been done
The UAPB Aquaculture Fisheries Center operates four Fish Disease Laboratories located in regions of Arkansas with concentrations fish farms. For regulatory purposes, these labs operate under APHIS approved protocols. These laboratories assist farmers in the diagnosis and treatment of fish health problems, by conducting fish export inspections, and by developing custom biosecurity plans to prevent the introduction of diseases. The Center also led a collaborative effort with industry and the Arkansas State Department of Agriculture to put together a first of its kind State Bait and Ornamental Fish Certification Program that now enrolls more than 95% of Arkansas production acres. In 2010 it was modified to include a new category of organisms controlled through best management practices. The Center has conducted 29 fish health regulation and biosecurity lectures and workshops at regional and national meetings. These workshops help farmers and agencies understand how to develop and follow good fish health regulations. Biosecurity education included 7 regional meetings and a series of articles that helped the catfish industry to adopt new measures to prevent the spread of a new strain of motile

aeromonas bacteria.

Results
The UAPB laboratories handle more then 2,000 diagnostic cases per year that save farmers an estimated $5,0000,000/yr in fish losses.l The majority of Arkansas fish exports travel under required inspection certificates provided only by the Aquaculture/Fisheries Center (more than 400 inspoections per year). These exports have a farm gate value of over $5,000,000/yr in sales occur only because of UAPB ANS inspections. Biosecurity measures taken in Arkansas in 2010 have apparently greatly restricted the introduction and spread of the new strain of aeromonas within Arkansas. Losses from this disease in Alabama in 2009 and 2010 were several million dollars. In Arkansas only a few thousand dollars worth of fish have been lost. The laboratories also assisted farmers in more than 20 other states.

4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases

Outcome #12

1. Outcome Measures

Percent replacement of improved feeding strategies of alternate species

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Commercial production techniques for alternative species vary a lot relative to those for major aquaculture species. In many cases, lack of standardized production procedures stems from lack of specific scientific knowledge on alternative species. Feed accounts for up to 50% of production costs in intensive culture of foodfish. In some cases, producers need basic knowledge on nutrient requirements of alternative species to select the most appropriate commercial diets available. In addition, they are interested in novel diet ingredients and feeding strategies that can be used to develop species-specific diets and improve the profitability of their industries. Human consumers are interested in products that taste good and are beneficial for health. There are growing ethnic

markets for foodfish sold live in the northeastern U.S. Largemouth bass is a good candidate for this market, but there are still no commercial diets designed specifically to meet their nutritional needs. Feed costs have escalated dramatically, and ingredients such as fish meal have more than quadrupled in cost. Alternatives to conventional fish meal are needed to sustain the production of carnivorous species.

What has been done

A 12-week feeding trial was conducted with LMB in aquaria. Three diets were formulated with different amounts of menhaden fish meal and oil, and Alaskan Pollack visceral meal (APVM). The ingredients were manipulated so that APVM replaced 0% (control), 25% or 50% of the menhaden fish meal and oil in the diets. After final weights were obtained and health assays were conducted, a stressor (crowding) was imposed on the remaining fish, and serum cortisol was measured to assess the stress response. There were no differences in weight gain, survival, muscle ratio, hepatosomatic index lysozyme, alternative complement activity, cortisol response to stress, or total lipid in the fillet among diets. However, total n-3 highly unsaturated fatty acids (HUFAs, 20:5n-3 + 22:6n-3) increased significantly in fillets of fish fed either diet with APVM compared to the control diet. These differences were not expected, as all the diets contained 51% or more menhaden fish meal, which is also rich in n-3 fatty acids. There was also a significant decrease in 20:4n-6 in fish fed the highest level of APVM.

Results

Alaskan pollack visceral meal could replace up to 50% of the menhaden fish meal and oil in largemouth bass diets without impairing fish performance or product quality. The n-3 HUFAs were actually higher in bass fed APVM than in fish fed diets with menhaden fish meal as the only protein source. The significance of the accompanying decrease in 20:4n-6 is uncertain, but changes in the relative amounts of eicosanoid-producing fatty acids (primarily 20:5n-3 and 20:4n-6) can potentially alter fish performance, especially in larvae and broodstock. These results are recent and will be presented primarily in 2010.

Thus far, scientists and producers have both expressed interest in the information. Because APVM is currently more expensive than menhaden fish meal, the APVM may be more appropriate to use in small quantities as a feed additive, for instance, to enhance the palatability of feeds with mostly plant ingredients. There is a continued need to conduct research to determine the lowest amounts of scarce and expensive feed ingredients like fish meal that can support good performance of alternative fish species, and to identify effective and economical alternative ingredients.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #13

1. Outcome Measures

Scientists and soybean and catfish producers requesting nutrition and feeding strategies to improve production efficiency and product quality of catfish

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
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.

What has been done
New diet ingredients were testd in feeding trials (6-12 weeks each) - 3 trials were done with fingerlings in aquaria, and one was a growout study in outdoor tanks. All trials were conducted to obtain a scientific foundation for changing existing diet formulations. Three trials focused on dietary lipids (menhaden fish oil, soybean oil, soybean oil enhanced with conjugated linoleic acids (CLAs), algal DHA oil, soybean lecithin). The fourth trial compared diets with 28 or 32% protein in finglerlings using traditional (animal protein) or plant (corn gluten) protein sources.

Results
In the lipid trials with fingerlings, there were few differences in growth, survival, or non-specific immune responses among diets. However, feed conversion was lower in fingerlings fed diets with menhaden fish oil or soybean lecithin in two separate trials. In the growout trial, catfish fed the diet with menhaden fish oil had significantly more "green grassy" flavor than fish fed diets with other oils, but there were now differences in standard performance criteria. Fatty acid analysis of the fillets is still in progress to determine the human health value of catfish fed different lipids.
In the trial with fish fed diets with 28 or 32% protein and traditional or alternative formulas, results were conflicting. In the first repetition, weight gain of fish fed the traditional formulas was significantly higher than that of fish fed the alternative formulas at two weeks. However, a power outage ended that trial prematurely, and when the experiment was repeated there were no differences in weight gain or survival of fish fed different diets. The results of the aquarium trials also conflicted with those of the pond trial conducted in a multi-batch system. In the pond trial, the yield of fingerlings fed diets with 32% protein was significantly higher than that of fingerlings fed diets with 28% protein (no formula effect). Some possible reasons for the conflicting results are differences in batches of fish used to conduct the trials, and differences in feed intake under conditions of constant (indoor) or fluctuating (outdoor) temperatures.
Results of all of these studies were obtained recently. They will be presented at scientific meetings and producer meetings in 2011. Scientists, soybean producers, and catfish producers have expressed interest in the new information. Implementation of results by industry will depend on the current cost and availability of each feed ingredient, as well as producer and consumer demands, which change frequently.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #14

1. Outcome Measures

Number of stakeholders using the catfish model

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The United States (U.S.)aquaculture industry is facing challenging economic conditions. Increasing quantities of imports have made it difficult to pass rapid increases in feed and other cots on to consumers. Increasing importance of catfish trade and rapidly changing global trade scenario lead us to examine, with main focus on the U.S. catfish industry i) how the different catfish exporting countries have been benefited/lost or going to benefit/lose from catfish trade, ii) what would be the direction of catfish trade in the near future, and iii) the deriving forces of direction of global catfish trade.

What has been done
Using "Constant Market Share" analysis, we have decomposed the growth of catfish exports of major catfish exporting countries to the U.S. into structural, competitive and second-order effects, and their sub-components. We have also studied competitiveness of the U.S. farm-raised catfish in domestic market.

Results
The U.S. farm-raised catfish industry could not harvest the benefits of the supply-demand gap created in the U.S. due to the shift of Vietnam's catfish exports away from the U.S. after 2003; but, China and Thailand and also some other catfish exporting countries derived the greatest extent of the benefits. Decline in the competitiveness of Vietnam's catfish exports to the U.S. has made China and Thailand catfish more competitive in the U.S. market. Our results indicte that the U.S. aquaculture industry and the government policy makers need to consider all importing finfish products in designing policies to improve the competitiveness of the U.S. catfish industry.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
603	Market Economics

Outcome #15

1. Outcome Measures

Number of catfish farmers in Arkansas using survey results

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Asian populations prefer to consume live fish due to their preferences for freshness, and traditional customs. Given the rising percent share of Asians in the United States (U.S.) population coupled with higher growth, concentration in a specific geographical area, high per capita fish consumption, distinct preferences for fish, and tendency to maintain food habits wherever they move, there is a need to study the salient features of these markets and the market opportunities offered to the U.S. farm-raised catfish.

What has been done
Due to the rapid increase in Asian population in the Northeastern region of the U.S., marketing of live fish is gaining popularity among the market operators. The Aquaculture/Fisheries Center of UAPB has conducted a study to explore this newly emerging market. Six hundred twenty consumers and forty market operators were surveyed in the Asian ethnic fish markets in New York, New Jersey, and Pennsylvania during December 2008 to July 2009. Descriptive and econometric analyses have been used to foresee the market opportunities for live catfish in the Asian ethnic fish markets.

Results
Live fish market in Asian ethnic markets is growing rapidly, and consumers in these markets are very diverse. Tilapia, striped bass, buffalo, catfish, bighead carp and eel are the best selling live fish species. Catfish ranked in 10th, 7th, and 6th in Chines, South Asian, and Non-Asian

consumer segments, respectively. The most important attributes considered for buying catfish are freshness (not frozen), taste, size (between one to two pounds), cheap price, and less bone. The sales volumes of live fish are very low in the months from May to August because of lack of supply. May to August period offers potential market opportunity for catfish farmers. The findings of the study might help catfish farmers in diversifying their markets.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
603	Market Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Changing Prices of Feed Ingredients)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 25

1. Name of the Planned Program

Climate Change

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water		20%		15%
112	Watershed Protection and Management		15%		15%
133	Pollution Prevention and Mitigation		15%		20%
134	Outdoor Recreation		10%		10%
204	Plant Product Quality and Utility (Preharvest)		20%		15%
307	Animal Management Systems		5%		5%
403	Waste Disposal, Recycling, and Reuse		15%		20%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	0.0	1.6	0.0	0.3

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	227272	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	104738	0	208846
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The long-term effectiveness of a swine waste treatment lagoon is being assessed by monitoring the water quality of the lagoon on a weekly basis during the spring and summer months (April-July). Water quality was also monitored during sprinkler application periods (approximately once monthly). Total nitrogen and total phosphorus in water samples were analyzed. Coliform in the samples were analyzed with the mFC agar method. Comparisons of inlet and outlet samples will be conducted. Soil samples will be taken from the effluent sprinkler field area before and during effluent application. The effectiveness of the constructed wetland was accomplished by taking water samples from the UAPB farm pond, the water entry point of the created wetland (CWL), and the discharge of the CWL. These water samples will be collected on a weekly basis and anlyzed for total nitrogen and total phosphorus. The olfactometry method will be used to measure odor concentration in lagoon air both before and after establishment of odor mitigating vegetation. Odorous air will captured from the feed - out lot, faring house and anaerobic lagoon in odorless tedlar or PVC bags and taken to the lab for analysis. Once in the lab the air is processed through the olfactometer and "sniff panel" immediately to determine its detection threshold. The APEX model will be used to predict hill-slope runoff from the UAPB farm. The modeler will take into account the livestock, cover type, soils, and cropping systems that make up the UAPB Farm study area. Both the Swine Waste Treatment System and Constructed Wetland Systems will be used as public outreach demonstrations for local farmers interested in swine waste management. The annual UAPB Farm Field Day and planned site visits are mechanisms by which demonstrations of the two systems will be exhibited. These demonstrations may yield opportunities for teaching techniques by which these technologies may be adapted and transferred to local farms. 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. Likewise, small and disadvantaged farmers will receive policy, technical and design assistance regarding the use of constructed wetlands for small farm watershed water quality improvement. 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.

During 2009-2010, the mean phosphorus concentration at the lagoon surface was 11.54 mg/L, with a standard deviation of 5.93 mg/L. Total nitrogen had a mean of 4.50 mg/L, with a standard deviation of 2.10 mg/L. Nitrate had a mean of 0.89 mg/L, with a standard deviation of 0.67 mg/L. Nitrite had a mean of 0.52 mg/L, with a standard deviation of 0.0.57 mg/L. Ammonia had a mean of 1.32 mg/L, with a standard deviation of 0.87 mg/L. The mean phosphorus concentration (at the surface) found for the same time period in chamber 1 (treatment wetland) of the constructed wetland was 2.45 mg/L, with a standard deviation of 1.66 mg/L. Total nitrogen mean was 2.29 mg/L, with a standard deviation of 1.34 mg/L. Nitrate mean was 0.34 mg/L, with a standard deviation of 0.33 mg/L. The nitrite mean was 0.28 mg/L, with a standard deviation of 0.32 mg/L. Ammonia mean was 0.37 mg/L, with a standard deviation of 0.35 mg/L. All nutrients sampled from wetland chamber 1 were reduced when compared to the nutrient levels in the lagoon. Personnel associated with this program were able to present the research and demonstration findings at several conferences and at the UAPB Farm Field day where over 200 individuals received abstracts and a short presentation. Those in attendance at the most recent field day responded that the project or some aspect of it most interested them during visit. Over 90 elementary school childeren toured the facilaty and were exposed to farm animals and dealing with animal waste. PARTICIPANTS: Edmund R. Buckner is the PI on the project. Willie Columbus is a graduate student who is conducting water quality research on the project. We anticipate that the graduate student will work on the project for a half year more and will develop a thesis and at least one additional water quality research presentation at the Annual National Water Quality Conference. TARGET AUDIENCES: The target audienece of project efforts include both undergraduate and graduate students in the discipline. Elementary, middle school and high school childern, small and limited resource farmers in the Mississippi Delta Region and extension professionals are also included in the target audience.

Conduct online and hands-on in-service training for Extension Educators, field trials, and method demonstrations.

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

Give presentations

Use of computer simulation modeling to predict the influence of different management scenarios on fishery yield, harvest, and size structure. Scenarios will include the existing 15-inch minimum lenght limit and no maximum length limit yield.

2. Brief description of the target audience

The target audience of project efforts include small and limited resource farmers in the Mississippi Delta Region and extension professionals. Both undergraduate and graduate students in related discipines are also included in the target audience.

Fisheries managers of Arkansas: Arkansas Game and Fish Commission, AGFC fisheries biologists and managers, tournament largemouth bass anglers, recreational anglers of Arkansas

Commercial hybrid striped bass producers, private impoundment owners and managers, Extension Educators, County Extension Agents, and natural resource managers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1423	8078	102	42

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Complete at least one extension publication per year.

Year	Actual
2010	1

Output #2

Output Measure

- document the number of small or limited resource farmers who have been assisted by the project.

Year	Actual
2010	4

Output #3

Output Measure

- Number of presentations at both local community meetings and national scientific meetings.

Year	Actual
2010	15

Output #4

Output Measure

- Number of published abstracts.

Year	Actual
2010	10

Output #5

Output Measure

- Number of refereed journal articles

Year	Actual
2010	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	The number of conservation practices utilized by swine farmers as a result of this project.
2	Increase the awaremess of environmental issues and policies that pertain to operating small swine farms.
3	Owners and managers of aquaculture ponds and reservoirs that benefited from aquatic weed cases
4	Youth education provided through extension programs
5	Amount increase of fathead minnow yields and profits

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Landowners and liestock farmers are concerned about the resource both as a means of livelihood and an inheritance.

What has been done
The swine waste management system has been shared with the public farm field days and with tour groups.

Results
Great interest has been expressed and the knowledge of the participants has been expanded by the conservation practices that were shared.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Agricultural and natural resource professionals as well as landowners and livestock farmers care deeply about this issue. They are concerned about the resource both as a means of livelihood for producers and as an inheritance.

What has been done
Both the swine waste treatment system has been demonstrated and related information has been shared at field days and toru groups.

Results
Great interest has been expressed and a desire for additional information (knowledge) has been expressed regarding conservation practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
204	Plant Product Quality and Utility (Preharvest)
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse

Outcome #3

1. Outcome Measures

Owners and managers of aquaculture ponds and reservoirs that benefited from aquatic weed cases

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	5000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Arkansas has over 60,000 acres of aquaculture ponds and over 300,000 ponds and reservoirs. A major problem for the owners and manager of these water bodies is management and control of aquatic plants. Furthermore, infestation by aquatic vegetation causes problems on thousands of cattle watering ponds, and roadside and irrigation ditches.
In order to use seines to harvest commercial ponds, producers want to eliminate all aquatic plants (with the exception of plankton). Other pond owners often want to eliminate certain aquatic plants and not others, for practical and aesthetic reasons. Misinformation and confusion leads to wasted money and effort, and poor management of aquatic plants.

What has been done
Over the past year, we fielded more than 800 telephone enquiries and requests for assistance, both directly and indirectly, from aquaculture producers, pond managers, District Biologists, Park Superintendents and hatchery managers for the Arkansas Game and Fish Commission, and University of Arkansas Cooperative Extension Agents.
UAPB Extension Specialists assisted in identification of nuisance plants. UAPB personnel also advised on appropriate control measure for more than 600 aquatic plant management cases. In addition, a demonstration project was undertaken to determine control measures for submersed aquatic weeds in baitfish ponds and other demonstrations were carried out to determine the effectiveness of several newly registered herbicides.

Results
We routinely promote the advantages of grass carp for long-term bio-control, as compared to the relatively rapid but short-term effects of herbicides as control agents. More than 200 pond owners reported successful implementation of improved weed management, and about 50 pond owners reported fewer problems with aquatic weeds than in previous years. Use of low rates of fluridone in commercial baitfish ponds has the potential to reduce by 50% the herbicide costs incurred by

producers. With experience gained in the use of imazapyr, carfentrazone, and penoxsulam, useful recommendations can now be communicated to stakeholders on their practical use. Field tests to provide rapid, lasting control of watermeal, one of the most persistent aquatic weeds in Arkansas, showed good success using multiple treatments of the herbicide diquat followed by goldfish stocked to provide long-term biological control.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation
307	Animal Management Systems

Outcome #4

1. Outcome Measures

Youth education provided through extension programs

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	715

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Youth education is a vital part of an extension program. Educational programs introduce students to the sciences and the students gain an appreciation of the sciences. These youth are the future of tomorrow's universities and industries.

What has been done
Two youth fishing derbies were held this year. One was part of the UAPB in Eudora Celebration and the other part of the UAPB Aquatic Sciences Day Program.

Results
Many of the youth had never gone fishing and several had the experience of catching their first fish. A monetary value cannot be placed on such an experience.

4. Associated Knowledge Areas

KA Code	Knowledge Area

134	Outdoor Recreation

Outcome #5

1. Outcome Measures

Amount increase of fathead minnow yields and profits

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	8410

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Profits in baitfish farming incease with yield, as the fixed costs of production are relatively high. With the traditional spawning-rearing pond method of fathhead minnow production, yields are relatively low, in the range of 250 - 450 lb/acre. The demand for fathead minnows has increased, but yields remain relatively low.

What has been done
A series of research studies have been conducted to develop a new method of fathead minnow production. Eggs are collected from brood ponds, hatched indoors, and resulting fry are stocked into ponds. Fish are fed to satiation and nightly aeration is provided. In additon to a joural article, results have been demonstrated at a field day, presented at producer association meetings, and disseminated in an Extension newsletter.

Results
Results from two years of studies demonstrated that yields of 2,500 to 4,500 lb/acre can be obtained in experimental ponds. Even with the added costs of egg collection and fry production, todays relatively high feed costs and increased expenses for aeration, estimated profits increase dramatically, from $290 - $530/acre to $8,700 - $14,000/acre. Yields from commercial ponds are unlikely to be as high as those obtained in the small, netted experimental ponds, but these studies show the potential for increased profit using this new production method.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Other (none.)

Brief Explanation

None.

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 26

1. Name of the Planned Program

Food Safety

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies		25%		25%
502	New and Improved Food Products		25%		25%
503	Quality Maintenance in Storing and Marketing Food Products		25%		25%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins		25%		25%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	0.0	0.3	0.0	0.8

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	114728	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	40654
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

This study focused on effects of polyphenoloxidase activity, sanitizers, and edible coatings on quality of fresh-cut sweet potatoes under modified atmosphere packaging during refrigerated storage. Trisodiumphosphate (4%), Sodium hypochlorite (NaClO) (1000 ppm), and Tsunami 200 were used as sanitizer. Sliced sweet potatoes from two cultivars (Beauregard and Covington) were treated with sanitizers and packed in high oxygen permeable bag and in low oxygen permeable bag flushed with gas composed of 4% O_2, 10% CO_2, 86% N_2. Sweet potatoes were stored at 4°C and analyzed every 4 days for up to 20 days. The surface color (L*, a*, and b* values) of sliced sweet potatoes was measured. Headspace gas composition of O_2 and CO_2 in the bags containing sliced sweet potatoes was determined. Aerobic plate counts and yeast and mold counts were analyzed.

2. Brief description of the target audience

Local farmers and limited sources farmers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	10	20	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Two abstracts and/or presentations

Year	Actual
2010	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Feedback from participants of UAPB's Farm Field Day and Rural Life Conference

Outcome #1

1. Outcome Measures

Feedback from participants of UAPB's Farm Field Day and Rural Life Conference

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

consistent supply of fresh and good quailty sweet potatoes during the study

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 27

1. Name of the Planned Program

Childhood Obesity

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
202	Plant Genetic Resources		50%		20%
502	New and Improved Food Products		50%		15%
701	Nutrient Composition of Food		0%		20%
702	Requirements and Function of Nutrients and Other Food Components		0%		10%
703	Nutrition Education and Behavior		0%		35%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	0.0	0.1	0.0	1.3

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	336874
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	3928	0	183973
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Three field experiments were conducted on selected varieties and lines of hot pepper (Capsicum annum) and bitter melon (Momordica charantia) for variety identification and single plant selection. Selection of pepper lines was based on phenotypic characteristics indicating potentials for higher productivity and antioxidant related pigmentation of the berries such as yellow, orange, pink, and purple. Eight new varieties of bitter melon were grown for seed increase and germplasm maintenance. Laboratory experiments were conducted for recipe development and taste testing of bitter melon recipes for consumer acceptability. Two distinctly different varieties of bitter melon (in color and bitterness) were identified to run a demonstration trial to determine consumer preferences between the two types: Green and White. Beef stews were prepared using a proven recipe for bitter melons and other vegetables. Two preparations of beef stew were tested, one using the Green and the other using White bitter melon. About 60 of the 2009 Agricultural Field Day participants took part in sampling the two recipes. The respondents scored on the flavor, texture, and appearance of the two beef-stew preparations. In addition, preliminary evaluation of hot pepper sauce and pickles were conducted using peppers possessing different colors (green, pink, yellow, and purple) There were 80 students in the 2009 Elementary Nutrition (HUSC 2311) class at UAPB. Majority of the students were African-American. A survey was developed to interview the students about lactose intolerance. The questionnaire was adopted from the "Questionnaire on lactose intolerance" developed by the Arthur Haulot Institute of Dietary Nutrition in Brussels (http://www.medisport.be/questionarya.html). The questionnaire was tested for validity and reliability in the 2010 spring semester before being administered to UAPB students.

2. Brief description of the target audience

Among the targeted audience were leaders of the agricultural, academic, and social communities including small-scale farmers, home gardeners, and other producers and consumers. Plant breeders & geneticists, food scientists and health-food activists were also addressed.
University students with majority African-Americans were educated about the causes and symptoms lactose intolerance in classes of the Elementary Nutrition and Nutrition and Wellness on the UAPB campus. The questionnaire was applied on 42 African-American students, 14 males and 28 females; 14 lived on campus and 27 lived off campus.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	45	210	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	1	1	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of research publication

Year	Actual
2010	2

Output #2

Output Measure

- # of promising crop line identified

Year	Actual
2010	12

Output #3

Output Measure

- # of successful food recipes

Year	Actual

2010 1

Output #4

Output Measure

- Microbial testing of yogurts for effective probiotics against lactose intolerance
  Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Recruitment of participants for the feeding study
  Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Workshops on yogurt containing probiotics
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	# of people have knowledge about the new croplines
2	# of people familiar with the new crop lines
3	# of people adopted the crop lines
4	# of people adopted the new recipes
5	Increased consumption of dairy products containing probiotics
6	Reduced symptoms of lactose intolerance
7	Increased calcium intake
8	Reduced weight gain
9	Increased awareness of health benefits of yogurt and probiotics in dairy products
10	Gneral improvement in children health

Outcome #1

1. Outcome Measures

# of people have knowledge about the new croplines

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

# of people familiar with the new crop lines

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources

Outcome #3

1. **Outcome Measures**

   # of people adopted the crop lines

   Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

   # of people adopted the new recipes

   Not Reporting on this Outcome Measure

Outcome #5

1. **Outcome Measures**

   Increased consumption of dairy products containing probiotics

   Not Reporting on this Outcome Measure

Outcome #6

1. **Outcome Measures**

   Reduced symptoms of lactose intolerance

   Not Reporting on this Outcome Measure

Outcome #7

1. **Outcome Measures**

   Increased calcium intake

   Not Reporting on this Outcome Measure

Outcome #8

1. **Outcome Measures**

Reduced weight gain

Not Reporting on this Outcome Measure

Outcome #9

1. **Outcome Measures**

Increased awareness of health benefits of yogurt and probiotics in dairy products

Not Reporting on this Outcome Measure

Outcome #10

1. **Outcome Measures**

Gneral improvement in children health

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Other (- Limitation of funds and help in the field - Students dropout from UAPB)

Brief Explanation

Experiments were badly affected by the management and environmental conditions. Weed control was not good due to shartage of hands and availability of appropriate herbicides for the specialty vegtables.

Phytochemical and nutrition analyses were not possible due to unavailability of appropriate collaborative partners. However, efforts are being made to run the analyses locally but speed is very slow, and thus results are yet to be available.

Did not travel to Iowa State University to do the microbial analyses of the yogurt samples. The selection of yogurt samples to be used in the feeding studies depends on the microbiological analyses.

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

Not done yet

Key Items of Evaluation

Not applicable

V(A). Planned Program (Summary)

Program # 28

1. Name of the Planned Program

Food Safety in Aquaculture

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
702	Requirements and Function of Nutrients and Other Food Components		100%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	43984	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	68265	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Work with the vulnerability panel and focus groups to help develop guidelines for the inspection process.

Provide technical assistance to USDA-FSIS.

Provide written documents and powerpoint presentations.

Two separate briefings to inform how the catfish industry is structured and how it operates.

Numerous phone calls, conference calls and emails about the U.S., Vietnam, and China's catfish industry.

Assist with the role assessment process.

Conference calls, emails, and meetings in Washington, D.C.

Preliminary meetings with processors and farmers in Little Rock, AR about food defense plans

Active extension program with processors and farmers througout the industry

Monitoring inspection and food defense

2. Brief description of the target audience

There are three target audiences for this program: 1) USDA-FSIS personnel who need assistance in understanding catfish farming and processing and 2) catfish farmers who will need to adopt new monitoring and record-keeping practices; and 3) catfish processors who will need to adopt new monitoring and record-keeping practices.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	65	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Briefings to catfish farmers and catfish processors

Year **Actual**

2010	2

Output #2

Output Measure

- Number of presentations to catfish farmers and processors

Year	Actual
2010	2

Output #3

Output Measure

- Number of emails, phone calls, and conference calls to catfish farmers and processors

Year	Actual
2010	10

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	We will provide technical assistance to USDA-FSIS by continuing to serve on panels and focus groups with FSIS
2	Number of contacts with catfish farmers and processors related to the new catfish inspection program

Outcome #1

1. Outcome Measures

We will provide technical assistance to USDA-FSIS by continuing to serve on panels and focus groups with FSIS

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	48

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The 2008 Farm Bill moved inspection of catfish from FDA to USDA-FSIS. Thus, FSIS was required to develop a rule for the Catfish Inspection Program. However, FSIS expertise is in cattle and poultry production and processing, not with catfish.

What has been done
UAPB extension personnel have provided a consistent supply of science-based information to USDA-FSIS. These has included providing briefings directly to senior USDA-FSIS personnel, through teleconferences, email messages, and compilations of reviews of the scientific literature. UAPB extension personnel have also served on the task forces on Vulnerability Assessment, both for domestic and imported products, and for development of Food Defense Plans.

Results
The draft Catfish Inspection Rule has been developed and is currently out for public comment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components

Outcome #2

1. Outcome Measures

Number of contacts with catfish farmers and processors related to the new catfish inspection program

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The new Catfish Inspection Rule includes new inspection procedures for both catfish farms and processing plants. Catfish industry people have no experience with FSIS inspection processes, but will be required to be compliant.

What has been done
Meetings have been held with catfish farmers and processors to discuss the proposed new inspection processes.

Results
The rule is out only in draft form at this point in time. When the final draft comes out, training programs will be initiated followed by individual assistance to catfish farmers and processors.

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Political)

Brief Explanation

Political opposition to the program from importers has slowed the process down

V(I). Planned Program (Evaluation Studies and Data Collection)

Evaluation Results

USDA-FSIS does plan to do an evaluation of the program several years after implementation

Key Items of Evaluation