

2010 Louisiana State University Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

The mission of the LSU Agricultural Center is to enhance the quality of life for the people of Louisiana through research and extension programs that develop the best use of natural resources, conserve and protect the environment, enhance the development of existing and new agricultural and related enterprises, develop human and community resources, and fulfill the acts of authorization and mandates of state and federal legislative bodies.

Limited resources at all levels are making it increasingly difficult to maintain vital LSU AgCenter programs. Unprecedented state budgets cuts of 29% since 2008, significantly affect programs jointly funded with state and federal dollars. Reduced operating and travel budgets, coupled with a reduction of over 200 FTEs in the last 5 years greatly hinder our ability to produce quality impacts in some areas where a critical mass of resources is not available. Increased reliance on new technologies and tools such as social media, increased external funding and greater dependence on trained volunteers have allowed the continued delivery of most programs but in a significantly altered manner. Total Web page views for the AgCenter for this reporting period were over 16 million and Web page visits over 13.5 million. Master Gardener volunteers alone contributed over 55,000 hours of effort to the AgCenter's consumer horticulture program. These are two examples of how we have attempted to deal with these challenges.

During this reporting period, the LSU Agricultural Center directed research and extension education programs in twelve (12) main program areas including the five (5) NIFA priority areas: Global Food Security and Hunger; Climate Change; Sustainable Energy; Childhood Obesity and Food Safety and seven (7) state-identified priority areas: Consumer Horticulture and Ornamentals and Turf; Family Development; Youth Development; Forestry and Forest Products; Community Development; Human Nutrition and Food (adults) and Family Resource Management. This report reflects the merging of previously-identified state program initiative areas into the NIFA priority areas.

Throughout this report, you will see indications of the significant impact the April 2010 Gulf Oil Spill had on the LSU AgCenter's program delivery emphasis. As this event unfolded, the efforts of many AgCenter faculty were refocused to address the immediate and residual needs of the people affected by this latest disaster. Still reeling from hurricanes of the last 5 years and feeling the impacts of the country's economic recession, this disaster only exacerbated the state's fragile economy. Consequently, much of the LSU AgCenter's effort has continued focus on disaster recovery and economic challenges.

Significant effort was made this year to more effectively communicate the impact of LSU AgCenter program efforts to key stakeholders. Part of that effort included the development of Parish Profiles and Experiment Station Profiles. These two-page documents include a snapshot of the parish or station; highlight major program impacts; and identify emerging issues and AgCenter efforts planned to address those issues. Communicating the public value of AgCenter programs was also part of this process.

Research Project Summary

Louisiana Agricultural Experiment Station scientists, located on the Louisiana State University and Agricultural and Mechanical College campus and at branch Research Stations located across the state,

continue to serve stakeholders by conducting research relevant to Louisiana agriculture. Research results are disseminated to producers, consultants, agribusinesses, government agencies, and other stakeholders, both directly and through extension agents and faculty.

Extension Program Summary

Even with the elimination of more than 100 extension faculty and staff positions in the last 5 years, Louisiana Cooperative Extension Service maintained delivery of all main programs in each of Louisiana's 64 parishes . These programs were conducted by Extension faculty located in parish, regional and campus offices. Programs are based on needs identified by stakeholders and research-based information is disseminated to Extension clientele through time-honored delivery methods such as group meetings, one-on-one contacts and ever-increasingly through the use of Web-based technology and social media.

Over the past several years, increased emphasis has been placed on accountability and reporting and significant changes are being made to the extension reporting system. Additional training was conducted, more frequent reporting was required and more individuals were required to report into the system in order to achieve more thorough documentation of overall program effort. **NOTE: Extension numbers contained within this report are a reflection of the effort reported by extension faculty.**

*****Note: Three program areas defined in previous Federal Reports--Animals and Animal Production Systems, Crops and Crop Production Systems; and Environment and Natural Resources--were merged into Global Food Security and Hunger, and Climate Change last year; leaving those previously-planned sections of this report blank.**

Total Actual Amount of professional FTEs/SYs for this State

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	250.0	0.0	151.0	0.0
Actual	270.7	0.0	152.9	0.0

II. Merit Review Process

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

- Combined External and Internal University External Non-University Panel

2. Brief Explanation

NIFA program reviews are conducted on a rotational basis across departments and primary program areas. Stakeholders provide annual reviews of LSU AgCenter programs through the advisory leadership system. In light of the current budget situation, the most intense reviews during the reporting year have been conducted by an internal team of AgCenter administrators which has evaluated each and every program and position in the LSU AgCenter in an effort to identify the most effective programs and to formulate a plan for eliminating, reducing and/or combining less effective programs in order to maximize limited resources.

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 non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of selected individuals from the general public
- Other (Grass roots meetings)

Brief explanation.

Input is sought from both external and internal stakeholders. Extension programs are guided by input from overall parish (county) advisory leadership councils, subject matter specific advisory groups which meet on an as-needed basis and various grass roots meetings of stakeholders across the state. Several AgCenter departments also have advisory committees which guide their efforts. Commodity groups and collaborating agencies provide valuable input into AgCenter research and extension programs.

Internally, members elected to the LSU AgCenter's Faculty Council represent the interests of all faculty in administrative and programmatic issues. Additionally, extension and research faculty convene at various times during the year in a format known as ACE (AgCenter Exchange) Groups. ACE Groups primarily function to:

- Improve communication and networking among faculty with similar responsibilities in the program areas
- Exchange information about new program direction and completed projects
- Identify priorities within each program area
- Identify gaps in research and extension programming and activities.

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

Brief explanation.

A concerted effort is made by the institution to identify, recruit and retain stakeholders who provide valuable input into the programming process. It is intended that these stakeholders represent the target population for each program area and that they have a vested interest in the success of the program. The stakeholders are often identified by LSU AgCenter faculty who have had an opportunity to communicate with them through various extension and research efforts or because someone knows of the prospective stakeholder's interest in a particular issue or targeted outcome. Commodity groups and partnering agencies and organizations also provide valuable input into this process.

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
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public
- Other (Grass roots meetings)

Brief explanation.

Input is primarily collected from stakeholders through the Advisory Leadership Council System. Advisory Council meetings were held in all 64 parishes (counties) during FY 2010. Typically, a modified nominal group technique is used to identify and prioritize critical issues which call for LSU AgCenter programming. Additionally, input is collected from stakeholders through annual agricultural base program evaluations, focus group meetings, meetings with commodity groups and using various surveys. Grass roots meetings and other listening sessions are being used more frequently to collect stakeholder input. Two prime examples from this reporting period include grass roots meetings to get input into the budget crisis and the series of listening sessions conducted following the Gulf Oil Spill to identify the needs of those affected in order to assist them in recovery efforts. Targeting individuals, families, fishermen, members of the tourism community, small business owners and local officials, valuable information was collected to guide future AgCenter programming.

3. A statement of how the input will be considered

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

Brief explanation.

Stakeholder input is used to establish program direction for both research and extension including the identification of short, medium and long term targeted outcomes and the inputs and outputs necessary to achieve those outcomes. As resources become more scarce, the use of stakeholder input is critical in identifying areas in which resources can be best leveraged and which programs have the greatest public value.

Brief Explanation of what you learned from your Stakeholders

The following are some critical issues which have been identified through the LSU AgCenter stakeholder input process:

- Continuation of disaster preparation, recovery and mitigation strategies
- Prioritization of LSU AgCenter programs in light of limited resources
- Increasing profitability in crop and animal production systems
- Maintaining and improving the environment
- Reducing the Incidence of obesity and related chronic diseases across the state
- Teaching effective parenting skills
- Providing quality early childhood education
- Helping families be resilient in times of crisis
- Providing positive activities for youth both in and out of school
- Teaching financial management skills including how to reduce debt and manage credit

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
5103136	0	3538682	0

2. Totaled Actual dollars from Planned Programs Inputs				
Extension			Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	5114800	0	5199461	0
Actual Matching	9383113	0	5199461	0
Actual All Other	23095739	0	51031938	0
Total Actual Expended	37593652	0	61430860	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	3873524	0	160255	0

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Global Food Security and Hunger
2	Climate Change
3	Sustainable Energy
4	Childhood Obesity
5	Food Safety
6	Consumer Horticulture, Ornamentals & Turf
7	Family Development
8	Youth Development
9	Forestry and Forest Products
10	Community Development
11	Human Nutrition and Food (Adult)
12	Family Resource Management
13	Animals and Animal Production Systems
14	Crops and Crop Production Systems
15	Environment and Natural Resources

V(A). Planned Program (Summary)

Program # 1

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
102	Soil, Plant, Water, Nutrient Relationships	5%		5%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		5%	
202	Plant Genetic Resources	0%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		5%	
204	Plant Product Quality and Utility (Preharvest)	5%		5%	
205	Plant Management Systems	25%		10%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		10%	
212	Pathogens and Nematodes Affecting Plants	5%		15%	
213	Weeds Affecting Plants	5%		5%	
216	Integrated Pest Management Systems	10%		10%	
301	Reproductive Performance of Animals	5%		5%	
302	Nutrient Utilization in Animals	5%		5%	
303	Genetic Improvement of Animals	0%		5%	
307	Animal Management Systems	15%		5%	
311	Animal Diseases	5%		5%	
601	Economics of Agricultural Production and Farm Management	5%		0%	
704	Nutrition and Hunger in the Population	5%		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

Actual	65.6	0.0	94.0	0.0
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2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1239305	0	2633451	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1239305	0	2633451	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
5596046	0	34739248	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Specific subject matter areas included in this initiative are:

- Animals and animal production systems
- Crops and crop production systems
- Commercial fruit and vegetable production systems
- Aquaculture production systems and coastal fisheries
- Food insecurity and hunger

Activities include extension outreach using group and individual methods and mass media, research studies; result demonstrations; and field days, all incorporating the latest technological advances and use of social media.

2. Brief description of the target audience

Livestock producers; row crop producers; crop consultants; commercial fruit and vegetable producers; agribusinesses; crawfish farmers; members of the coastal fishing sector; commercial and private pesticide applicators; consumers of food and fiber; and Louisiana families and individuals living in poverty.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	216078	168679	54852	8406

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

Patent Applications Submitted

Year: 2010
 Actual: 2

Patents listed

Rice Cultivar Designated 'CL 131'
 Herbicide-Resistant Rice

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	39	124	163

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2010	4845506

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2010	4047018

Output #3

Output Measure

- Number of new pesticide applicator certifications (private and commercial) issued

Year	Actual
2010	900

Output #4

Output Measure

- Number of pesticide applicator certifications (private and commercial) renewed

Year	Actual
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2010 5500

Output #5

Output Measure

- Number of other extension educational pubs produced

Year	Actual
2010	39

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Adoption of recommended practices by Louisiana livestock producers.
2	Adoption of recommended practices by Louisiana row crop producers.
3	Adoption of recommended practices by Louisiana's commercial fruit and vegetable producers.
4	Adoption of recommended practices by Louisiana aquaculture producers.
5	Percentage of Louisiana individuals below poverty level who adopt 3 or more practices regarding the use of limited resources to prepare and consume healthier foods.

Outcome #1

1. Outcome Measures

Adoption of recommended practices by Louisiana livestock producers.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Louisiana's hot, humid climate creates challenges of heat-stress, high parasite and pathogen populations, poor reproductive performance, disease pressures, impaired water quality and low forage quality. Assessing animal adaptability, designing effective production systems that include disease prevention and resistance, genetics, physiology, nutrition and the environment are key concerns. Improving the safety, quality, functionality and consumer acceptance of animal products is ongoing.

What has been done

In-state and multi-state extension and research programs addressed beef, dairy, equine, small ruminant, swine and poultry species emphasizing animal health, nutrition, genetics, reproductive physiology and comparative production management systems. Enhancing the functionality, safety and acceptance of animal products was examined. Extension agents and specialists generated adoption of recommended practices through programs such as Master Cattle Producer and Master Horseman, producer meetings, field days, demonstrations and educational publications using Web-based and social media technologies.

Results

Extension and research efforts resulted in adoption of recommended practices to improve sustainability. Economical cattle, swine and poultry diets were developed that minimized nitrogen and phosphorus entry into the environment without decreasing productivity. Supplementation with local feed by-products and incorporation of clovers into annual perennial grass pastures improved growth performance in grazing animals. Technologies for improved reproductive efficiency in livestock were developed. Techniques for nuclear transfer of DNA improved efficiency of embryo transfer in livestock and new methodologies were developed for early detection of metabolic syndrome in mares. A 4:1 ROI was realized for simultaneous control of internal and external

parasites in beef cattle. Livestock budgets were prepared and used to calculate production costs and net margins.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
311	Animal Diseases
601	Economics of Agricultural Production and Farm Management

Outcome #2

1. Outcome Measures

Adoption of recommended practices by Louisiana row crop producers.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Louisiana's cropping systems pose agronomic, economic, and environmental challenges. Variable soils, climatic conditions, and pest pressures affect crop yield and input costs, and commodity price instability is a concern. Major crops include corn, cotton, rice, grain sorghum, soybeans, sugarcane, and wheat. Research in variety development, plant nutrition, pest management, cultural practices, and farm management are necessary to sustain crop production as a viable economic industry.

What has been done

Extension agents and specialists generated adoption of recommended practices through producer meetings, field days, demonstrations, on-farm verification and educational publications using Web-based and social media technologies. Plant breeding efforts focus on rice, sugarcane,

and wheat. Research addressed yield, cultural practices, and pest management with focus on maximizing net economic return per acre. Louisiana Master Farmer and Pesticide Certification Programs emphasized adoption of best practices and safe use of pesticides.

Results

Producers have realized increased yield and economic returns as a result of adoption of practices such as efficient use of precision ag technologies, conservation tillage, improved management of crop residues and the use of newly released varieties of major crops, such as rice, sugarcane and wheat. The adoption of revised crop fertilization recommendations allows growers to produce economically optimal yields and to maximize returns per acre. Collaborative extension and research efforts in the area of weed, insect, and disease management provide growers with environmentally-sound treatment options for targeted pests. 900 new private and commercial pesticide applicators were certified and over 5,500 recertified in nearly 100 Pesticide Certification Workshops conducted by extension agents and specialists who educate applicators on label reading and the safe use handling and application of pesticides.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
201	Plant Genome, Genetics, and Genetic Mechanisms
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #3

1. Outcome Measures

Adoption of recommended practices by Louisiana's commercial fruit and vegetable producers.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Vegetable and fruit production generates over \$200 million (value-added) for Louisiana's economy each year. Needs were greatest to: improve production efficiency and quality to enhance sustainability and increase profitability; address the high cost of labor and enhance profitable marketing of products; develop current information on cultivars for fresh market and processing venues; maintain the integrity of seed programs; address pest management concerns; and food safety.

What has been done

Growers participated in extension workshops, producer meetings, and field days and used Web-based tools on production of commercial fruits and vegetables including blueberries, sweet potatoes, and greenhouse tomatoes. Sweet potato research and extension efforts concentrated on validation of a production model and evaluation of bulk harvest and storage systems. MarketMaker, a system that locates markets for agricultural products, was completed for launch.

Results

Citrus production is stable due to educational efforts for introduced species such as the Asian citrus psyllid. Efforts to overcome quarantines in citrus production will enable producers to expand marketing options. Web and social media sites such as the eXtension project, "All about Blueberries," provide information transfer to a wider, more diverse audience. MarketMaker is intended to connect farmers with new markets to sell crops for higher market value than traditionally received. Greenhouse tomato production is more efficient and cost effective. Producers understand more about virus transmission in sweet potatoes and can use this information to improve yields. More efficient means of producing and storing sweet potato will improve the economics for both processing and fresh market producers. A \$150 million sweet potato processing facility was opened in 2010, positively affecting the Louisiana economy.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
201	Plant Genome, Genetics, and Genetic Mechanisms
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #4

1. Outcome Measures

Adoption of recommended practices by Louisiana aquaculture producers.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Sustained aquaculture production will depend upon profitability and improved production efficiencies. Rising input costs, global competition and increased regulations have strained Louisiana's aquaculture industries, impacting over 2,100 farms producing in excess of \$252 million in aquaculture products.

What has been done

Research has resulted in refinements of crawfish management strategies, nutritional requirements and recommendations for alligator and pompano production; technologies necessary for commercially viable marine baitfish culture; and techniques for improving spawning and specialized breeding aspects of existing and potential aquaculture species. Extension Sea Grant agents and fisheries specialists conduct workshops and producer meetings and use Web-based resources to generate adoption of research-proven recommendations.

Results

Adoption of more efficient harvesting and management recommendations could decrease operational expenses for many of Louisiana's 1,200-plus crawfish farms by up to 20% while increasing production in the \$110+ million industry. Lowering feed costs through improved formulations and feed conversion rates would provide a key incentive for the struggling \$28 million alligator industry. Reproductive and other biological data will provide much of the fundamental knowledge necessary to develop a viable baitfish culture sector for the coastal fishing sector. Preliminary ground work has been laid for new markets in aquaculture germplasm, enabling a shift from farm production to creation and sale of genetic improvements worldwide. Development of alternative species could result in increased diversification and additional options for the state's producers. The aquaculture industry in Louisiana will become more sustainable

and profitable as a result of these efforts.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
311	Animal Diseases
601	Economics of Agricultural Production and Farm Management

Outcome #5

1. Outcome Measures

Percentage of Louisiana individuals below poverty level who adopt 3 or more practices regarding the use of limited resources to prepare and consume healthier foods.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	36

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Eighteen percent of Louisiana families with children and 23% of adults without children live in poverty. Poverty rates are higher among African Americans (44%) and children 18 and under (31%); the highest in the U.S. Louisiana ranks 13th in U.S. for SNAP participation: 31% White, 60% African American, 3% Hispanic, and 7% other. Only 25% of adults eat five servings of fruits and vegetables daily and only 39% are physically active.

What has been done

Thirty-one EFNEP assistants reached 1,922 families and 13,763 youth. SNAP-Ed reached 51,357 individuals with information on resource management and budgeting food dollars. Over 13,000 individuals 18-59 years of age and 6,000 over 60 year of age participated in SNAP educational classes. Gardening lessons were received by 6,664 individuals, Dietary Guidelines lessons by 9,604, and newsletters by 7,167. International Programs provided expertise to developing

countries to enhance global food supply.

Results

EFNEP programs resulted in improved food budgets; 28% planned meals more; 29% compared prices more; and 52% of families less often ran out of food at month's end. Nutrition knowledge was provided through 15 Family Nutrition Nights. Consumption of fruits/vegetables was promoted to 379 students. Gardens at 50+ schools and a physical activity/ nutrition program at 73 schools led to increased physical activity and nutrition knowledge. A 4-H Camp survey of 452 youth promoted healthy choices; 89% planned to eat more fruits/vegetables and 70% to drink fewer sweetened beverages. HACCP and Market training were conducted in South Africa, Zambia, Namibia, Mozambique, Malawi, Ukraine, and Moldova. Nyama linked locals to Checkers/Shoprite and Zambia formed goat/cattle markets. Leveraging allowed four business plans and a loan; four years help to Armenia formed a food safety system; USAID/Ghana assisted economic growth, agriculture and food security resulting in monitoring, reporting and evaluation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of program efforts to address the most pressing needs of Louisiana residents.

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

Evaluation Results

See RESULTS section of Outcome/Impact statement.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

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
101	Appraisal of Soil Resources	5%		15%	
112	Watershed Protection and Management	15%		0%	
132	Weather and Climate	10%		0%	
136	Conservation of Biological Diversity	5%		5%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		15%	
202	Plant Genetic Resources	0%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		15%	
205	Plant Management Systems	35%		0%	
206	Basic Plant Biology	0%		15%	
403	Waste Disposal, Recycling, and Reuse	5%		20%	
404	Instrumentation and Control Systems	10%		10%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	15%		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
Actual	25.1	0.0	7.3	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
474257	0	944181	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
4742570	0	944181	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
2141496	0	986609	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Specific subject matter areas and programs included in this initiative are:

- Animal waste handling and utilization
- Water quality
- Environment and natural resources
- Sustainable housing
- Wetland plants
- Louisiana Master Farmer Program

Activities include extension outreach using group and individual methods and mass media, research experiments; result demonstrations; and field days, all incorporating the latest technological advances and use of social media.

2. Brief description of the target audience

Coastal managers, Louisiana wetlands stakeholders, commercial and recreational fishermen, participants in the Louisiana Master Farmer and Master Cattle Producer programs, other agricultural producers, livestock producers and Louisiana homeowners, builders and retrofitters.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	76999	15462	42516	473

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	4	39	43

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of individuals who toured LaHouse

Year	Actual
2010	2565

Output #2

Output Measure

- Number of building professionals involved in LaHouse educational events

Year	Actual
2010	1700

Output #3

Output Measure

- Number of consumers involved in LaHouse educational events

Year	Actual
2010	3000

Output #4

Output Measure

- Number of Web page views

Year	Actual
2010	2782733

Output #5

Output Measure

- Number of Web page visits

Year	Actual
2010	2341887

Output #6

Output Measure

- Average number of energy-saving measures adopted by consumer audiences

Year	Actual
2010	14

Output #7

Output Measure

- Average number of building practices adopted by building and retrofitting professionals

Year	Actual
2010	7

Output #8

Output Measure

- Number of farmers certified through the Louisiana Master Farmer program

Year	Actual
2010	9

Output #9

Output Measure

- Number of additional educational publications produced

Year	Actual
2010	33

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Reduce the impact of animal waste on the environment.
2	Increased adoption of high performance building and retrofitting practices.
3	Determine ways to reduce the impact of animal waste on the environment through research discovery and development.
4	Increased adoption of recommended practices to reduce non-point source pollution in Louisiana waterways.
5	Increased coordination of research and extension activities to address environment and natural resource concerns across the southeastern US.
6	Reduce coastal erosion through the establishment of viable wetland plants.

Outcome #1

1. Outcome Measures

Reduce the impact of animal waste on the environment.

2. Associated Institution Types

- 1862 Extension

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)

More than 280,000 tons of animal and poultry waste are produced in Louisiana each year. Producers must handle this waste in an environmentally-friendly manner to minimize the potential negative effects waste can have on waterways. Animal wastes improperly applied to or stored on land can lead to runoff that can reduce surface and groundwater quality by introducing excessive levels of nutrients such as nitrogen and phosphorus, organic matter and pathogens into the environment.

What has been done

Educational efforts and field trials have addressed the effectiveness of implementing environmental best management practices to minimize the effects of production animal agriculture on water quality. Research based information has been used to conduct field studies to evaluate proper manure/litter application rates while reducing nutrient runoff. Producers have been educated about composting ag byproducts through individual contacts and group meetings.

Results

Livestock and poultry producers improved waste management through using best management practices for soil and manure/litter analyses to develop, implement, and use nutrient management plans. Environmental stewardship, environmental best management practices, air quality, and nutrient abatement educational efforts were conducted for equine, beef, dairy, poultry, and other animal agriculture producers. By following research-based extension recommendations, animal producers stored manure and litter according to recommendations, applied poultry litter and manure at recommended rates and times, and reestablished riparian zones.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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112 Watershed Protection and Management
403 Waste Disposal, Recycling, and Reuse

Outcome #2

1. Outcome Measures

Increased adoption of high performance building and retrofitting practices.

2. Associated Institution Types

- 1862 Extension

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)

The need for energy efficiency to reduce dependence on non-renewable energy, environmental preservation and pollution prevention, disaster mitigation, family health, safety and economic stability, and state and community economic recovery are driving educational efforts in sustainable housing.

What has been done

The LaHouse Resource Center (lsuagcenter.com/LaHouse) is an educational attraction that serves to demonstrate high performance building and retrofitting practices. Technical assistance was provided to 9 builders for demo homes; and more than 100 educational activities, including workshops, consumer seminars, CEU seminars, and conferences were conducted. A regional "Building Your High Performance Home" book was produced; and 100+ online articles, photos, Online Training Center (videos, courses) were posted to the LaHouse Web site which drew 800-1300 visits/month.

Results

Consumer audiences adopted avg. of 14 energy-saving practices and 82% were willing to invest >5% more for energy efficiency. Mean knowledge level rose from 1.5 to 3.2 on 5-point scale. *LaHouse consumer audience is projected to annually save: 120,800 million Btu's; \$2.23 million; 81,900 lbs. SO₂, 55,900 lbs. NO₂, and 22,300 tons of CO₂ emissions. Housing pro audience adopted an average of 7 building practices. Mean knowledge rose from 3.2 to 4.1. Builders planned to build an average of 12 high-performance homes/year. *Technical audience is projected to annually save: 42,700 million Btu's; \$1.57 million; 75,000 lbs SO₂, 41,000 lbs. NO₂, and 12,700 tons CO₂ emissions. (*Estimates of potential program impact are based on survey results, FY10 audience numbers and energy modeling software analyses of a benchmark house

and savings from adoption rates.)

4. Associated Knowledge Areas

KA Code	Knowledge Area
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #3

1. Outcome Measures

Determine ways to reduce the impact of animal waste on the environment through research discovery and development.

2. Associated Institution Types

- 1862 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)

Animal waste handling and utilization presents a challenge to producers. While manure can be source of nutrients in agricultural operations, its delivery can be unreliable, potentially pollutant and often uneconomical for farmers. Louisiana waters are reported as impaired because of agricultural runoff. Methane, nutrients and pathogens released from manure are among the leading causes of environmental contamination. Improved manure handling and application methods need to be developed.

What has been done

Issues were addressed from animal waste and soil remediation perspectives. Studies evaluated ways to optimize nutrients in animal feeds. Economic value of manure nutrients and transportation viability were examined in support of cost-sharing programs. Enhanced treatment systems were evaluated as alternatives or in addition to single lagoons. Field studies evaluated proper waste application and soil remediation to reduce leaching while keeping the land productive.

Results

Studies demonstrated that dairy cows can maintain high productivity without phosphorus supplements and that nitrogen loss to the environment from swine and poultry can be minimized

using supplemental amino acids. The use of in-house pasteurization of broiler litter has been beneficial to broiler producers and reduced the amount spread on land. Wastewater recycling for nutrients alone is cost-prohibitive for most dairy producers, but estimates showed that a 75% cost-sharing program would ensure proper manure disposal. More than 148 lagoons were pumped onto agricultural land since 2001 with the aid of the local NRCS cost-sharing program. Animal Feeding Operations can also use sequential treatment to remove pollutants. Pathogen dynamics studied suggest wildlife contamination of wastewater may significantly increase E. coli count. Strains of E. coli were shown to have different survivability and their reasons are being investigated. Biofuel crops were investigated for soil bioremediation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems

Outcome #4

1. Outcome Measures

Increased adoption of recommended practices to reduce non-point source pollution in Louisiana waterways.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

Over 70 percent of LA's waterways are listed on EPA's 303d list as impaired and not suitable for fishing or swimming. Many of these impairments are thought to result from non-point pollution emanating from watershed land use practices such as agriculture, forestry, individual sewage treatment, home landscape, construction and other urban and suburban conditions.

What has been done

LSU AgCenter continued its Master Farmer Program to educate landowners and encourage adoption of BMPs to mitigate runoff from various land use. Other programs: educate and

encourage dairymen to empty lagoons on a 3-5 year rotation; conduct research and extension outreach on lagoon design systems; and educate homeowners and municipalities about runoff control. Research continued on a variety of new BMPs that reduce impact of added agricultural chemicals on water quality.

Results

LA Master Farmer Program includes an intensive 8 hours of environmental classroom instruction, visits to model farms and implementation of required BMPs to gain certification from the Louisiana Department Agriculture and Forestry. Over 2,700 farmers who control or own over 1M acres in LA are enrolled in this program. This year 9 farmers were certified and 124 farmers are currently certified which means they have met criteria to protect soil, water animals, plants, and air. Other applied research and extension programs on animal waste and homeowner issues resulted in the Tangipahoa River, an important economic waterways that runs through one of Louisiana's most populated areas and through the states' highest dairy production area, being de-listed by EPA and DEQ from the 303d list and is now open for fishing and swimming. Two other river segments in the area are scheduled to be removed from the list this year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
112	Watershed Protection and Management
132	Weather and Climate
205	Plant Management Systems
403	Waste Disposal, Recycling, and Reuse

Outcome #5

1. Outcome Measures

Increased coordination of research and extension activities to address environment and natural resource concerns across the southeastern US.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

The wellbeing of Louisiana depends on its resource-based economy. The state's natural capital assets must be efficiently managed for both current and future generations. Resource management includes wise use and careful analysis of allocation decisions made today and their potential impacts. While research and extension efforts related to natural resource conservation, use, and management have increased in recent years, efforts have been fragmented and widely dispersed.

What has been done

The Center for Natural Resource Economics & Policy (CNREP) is a team of economists and policy professionals that coordinate the research and extension activities of natural resource management at LSU and other institutions in the southeastern US. The new center is helping Louisiana meet resource management challenges by engaging and supporting research and extension faculty in socioeconomic initiatives related to energy, coastal & inland wetlands, fisheries, wildlife, land, and water resources.

Results

Center membership has grown to 26 faculty from 12 universities & resource management agencies throughout the SE U.S. Examples of specific impacts include: 225 people from 20 US states and 9 countries attended the 3rd national CNREP conference on climate change (www.cnrep.lsu.edu). A new technique for estimating the economic impacts of natural disasters continues to be refined. The research has provided economic justification for more than \$250M in recovery funding and the guidance for distributing these funds to more than 2000 fishing businesses. CNREP economists implemented several applied research projects related to coastal wetland management & restoration. These studies have been developed with public agencies and used to improve the allocation efficiency of restoration in support of \$89M in marsh creation projects authorized in 2010.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
132	Weather and Climate

Outcome #6

1. Outcome Measures

Reduce coastal erosion through the establishment of viable wetland plants.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

Wetland deterioration caused by climate change and/or human activities plagues the Northern Gulf of Mexico Basin, especially Louisiana. Louisiana's coastal plains are the largest expanse of wetlands in the contiguous United States and one of the world's most significant wetland areas. The long term social, environmental, and economic consequences of extensive wetland loss affect our nation's security. Individual states and the nation are deprived of wetland-related economic and environmental benefits.

What has been done

The LSU AgCenter developed the Coastal Plants Program, a long-term, multi-disciplinary, and multi-institutional program of coastal plant research. The Coastal Plants Program's mission is to develop genetically improved plant varieties and applied restoration techniques to combat wetland deterioration. The Coastal Plants Program also exchanges information through a cooperative research and extension program, which supports an expanded group of Louisiana wetland stakeholders.

Results

The Coastal Plants Program (CPP) identified 16 cultivars to be released for vegetative and wildlife restoration: 6 *Spartina alterniflora*, 4 *Uniola paniculata*, and 6 *Schoenoplectus californicus*. LSU AgCenter extension agents educate the public regarding restoration plant availability and cultivation. Genetically distinct cultivars are needed in restoration projects because of their capacity to adapt to changes due to environment, climate, or human activities. The CPP has also established *S. alterniflora* using seeds that were distributed via aerial application to remote or inaccessible sites. The CPP developed methodologies for large-scale seed production of *S. alterniflora* and technologies, such as seed coatings, to increase the success of aerial application. Seed coatings increased seed weight, which theoretically increases the chances that seeds anchor into marsh soil allowing large areas of endangered coastal marshes to be restored inexpensively with seeds.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
112	Watershed Protection and Management
132	Weather and Climate
201	Plant Genome, Genetics, and Genetic Mechanisms
205	Plant Management Systems
206	Basic Plant Biology

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Sustainable Energy

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
402	Engineering Systems and Equipment	10%		20%	
403	Waste Disposal, Recycling, and Reuse	10%		10%	
511	New and Improved Non-Food Products and Processes	70%		60%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	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
Actual	3.9	0.0	7.9	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
73123	0	98311	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
73123	0	98311	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
330183	0	2268187	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activity included research and extension efforts regarding biofuel development using Louisiana-produced crops and the production and use of biodiesel as an alternative fuel.

2. Brief description of the target audience

Producers, consumers, extension faculty and scientists.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	300	350	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	12	13

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Participants gain knowledge regarding the use of agricultural feedstocks to generate biofuels.
2	Identification of crops and cropping systems capable of producing biomass.

Outcome #1

1. Outcome Measures

Participants gain knowledge regarding the use of agricultural feedstocks to generate biofuels.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

The Energy Independence and Security Act of 2007 called for at least 12.95 billion gallons of renewable fuels to be used in the U.S. in 2010 and 36 billion gallons (16 billion gallons of cellulosic biofuel) by 2022. The recent USDA Roadmap on Biofuels calls for production of 13.4 billion gallons of advanced biofuels from grassy crops. The rapid expansion of the biofuel's industry has occurred as a result, for the most part, of this country's growing dependence of foreign oil.

What has been done

The Audubon Sugar Institute conducted research on pretreatment options for the production of cellulosic ethanol from multiple feedstocks and utilized other processes to produce "second generation" biofuels, to include biobutanol. Extension faculty in the AgCenter's Callegari Center conducted workshops for the conversion of waste cooking oil into biodiesel. Research was conducted on efficient lipid extraction from traditional and non-food feedstock and their conversion into biodiesel using alternative processing technologies.

Results

Alkaline/ammonia pre-treatment/hydrolysis options for lignocellulosic feedstocks - bagasse, energy cane and sweet sorghum - have been accomplished at the Audubon Sugar Institute to convert and ferment cellulose to ethanol. The production of second generation biofuels such as biobutanol was successful. A protocol for rapid analysis for lignocelluloses using NIR was developed and crop fractionation and fermentation technology for the above feedstocks was defined. Scientists developed a method for oil extraction and transesterification from traditional and non-food feedstock into biodiesel using microwave technology. Over 150 persons attended workshops at Callegari Environmental Center where extension faculty instructed participants on the conversion of waste cooking oil to biodiesel. Efforts to streamline the activities in biorefining

area culminated in recent approval of the Louisiana Institute for Biofuels and Bioprocessing (LIBBi) for research, education and extension outreach activity.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
511	New and Improved Non-Food Products and Processes

Outcome #2

1. Outcome Measures

Identification of crops and cropping systems capable of producing biomass.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

Federal mandates for energy independence require identification of economically and environmentally sustainable biomass feedstock systems for biofuel production. Louisiana's humid, mild environment is well suited for the production of biomass for energy. While the focus has been the development of agricultural feedstock systems that complement and are compatible with the existing sugarcane and forestry industries, considerable effort is being directed at a diverse array of biomass sources.

What has been done

Agricultural biomass sources (sweet sorghum, energy cane, switchgrass and trees) and non-agricultural biomass sources (microalgae and tallow trees) and sustainable feedstock production systems have been identified. Industry partnerships were formed to evaluate energy cane and sweet sorghum for cellulosic and conventionally fermented ethanol, respectively. Progress is being made toward using both sweet sorghum and energy cane to produce advanced biofuels rather than ethanol.

Results

Advances have been made in identifying sweet sorghum sustainable production practices including optimization of yield with moderate fertilizer input and limited tillage. Evaluation of feedstock delivery options using sweet sorghum hybrids of differing maturity has led to the identification of viable scenarios for sustained bio refinery operation. A recently-released high-fiber sugarcane is being used by industry for pilot-scale cellulosic ethanol production. Butanol has been successfully produced from the juices and lignocellulosic portions of sweet sorghum and energy cane. Micro-propagation techniques are being used to enhance the quality of planting material for biomass production of tallow trees for lipid content. Loblolly pine-switch grass agroforests were demonstrated to be compatible and to sequester greater amounts of carbon than switch grass grown alone. Progress is being made on mass cultivation of microalgae, algal harvesting, lipid extraction and light optimization.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
511	New and Improved Non-Food Products and Processes
512	Quality Maintenance in Storing and Marketing Non-Food Products

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 4

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
702	Requirements and Function of Nutrients and Other Food Components	0%		100%	
703	Nutrition Education and Behavior	50%		0%	
724	Healthy Lifestyle	50%		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
Actual	17.9	0.0	0.5	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
338782	0	73826	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
338782	0	73826	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1529762	0	189966	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Nutrition education programs targeting youth and their caregivers were conducted. The Smart Bodies Program (a nutrition and physical activity program) was implemented in Louisiana through the 4-H

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 program and with elementary school students.

2. Brief description of the target audience

Louisiana youth in grades K-5; 4-H'ers, elementary school teachers, and caregivers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	72364	65523	432393	99656

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	8	8

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2010	95910

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2010	83000

Output #3

Output Measure

- Number of youth reached with Smart Bodies Program

Year	Actual
2010	64667

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Louisiana youth and their caregivers adopt healthy lifestyle behaviors which will lead to reduced incidence of childhood obesity.

Outcome #1

1. Outcome Measures

Louisiana youth and their caregivers adopt healthy lifestyle behaviors which will lead to reduced incidence of childhood obesity.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

Louisiana ranks 5th (20.7%) in childhood obesity in the nation and 5th in adult obesity (30.6%). Food choices of LA children lead to these individual being overweight which predisposes them to increased rates for many diseases, including diabetes, heart disease, and respiratory diseases. Underpinning these statistics is poverty. Louisiana has the 2nd highest poverty rate nationally (19.6%). Greater than 26% of its children live in poverty, the 2nd highest rate in the nation and highest in the South.

What has been done

Extension agents and specialists received training on the health risks of obesity and the benefits of breastfeeding. To decrease childhood obesity, research emphasized: child preferences for healthy choices, adolescent snacking, omega-3 fat and resistant starch benefits. Extension's Smart Bodies (SB) program, a nutrition education and physical activity program, was put in schools. SNAP-ED piloted Family Nutrition Nights for parents and students. A school garden-based nutrition education program was developed by extension faculty.

Results

Nutrition education targeted youth/teens. With volunteers, SB reached 64,667 K-5th youth and 2,402 teachers. Smart Choices was delivered to 13,763 youth and 6,813 adults resulting in increased consumption of fruits, vegetables, whole grains, increased physical activity and decreased consumption of high fat foods. In a school setting, repeated tastings of unfamiliar fruits/vegetables increased preferences for these. SNAP-ED held 15 Family Nutrition Nights; school garden-based nutrition education programs were at >50 schools. Snacking behaviors of adolescents were associated with reduced risk for overweight. Infants of women who ate omega-3 fatty acids of fish were leaner than infants of women not eating fish. LA has crops that are good sources of starch that is not fully digested; that starch was shown in animals to decrease body fat,

providing a foundation for future human trials.

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 5

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
504	Home and Commercial Food Service	45%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	10%		20%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	5%		50%	
723	Hazards to Human Health and Safety	40%		20%	
724	Healthy Lifestyle	0%		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
Actual	4.5	0.0	3.3	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
85782	0	28215	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
85782	0	28215	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
387346	0	1024214	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activity involved appropriate extension and research including result demonstrations, workshops, classes, certification programs, studies and effective use of a variety of media sources to address food safety-related issues.

2. Brief description of the target audience

Consumers, commercial seafood processors, children and food handlers, including restaurateurs and food vendors.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	11553	8988	14179	926

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	4	3	7

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of individuals who received seafood, meat and poultry HACCP training

Year	Actual
2010	60

Output #2

Output Measure

- Number of individuals who received ServSafe training

Year	Actual
2010	65

Output #3

Output Measure

- Number of individuals who received Sanitation Control Protocol training

Year	Actual
2010	25

Output #4

Output Measure

- Number of individuals who received Better Process Control School training for canned and acidified foods

Year	Actual
2010	60

Output #5

Output Measure

- Number of additional educational publications produced

Year	Actual
2010	10

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased awareness, knowledge and/or skills regarding safe food handling and preparation by both consumers and commercial entities.
2	Identify ways to minimize food safety threats related to Louisiana-produced food products through research.

Outcome #1

1. Outcome Measures

Increased awareness, knowledge and/or skills regarding safe food handling and preparation by both consumers and commercial entities.

2. Associated Institution Types

- 1862 Extension

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)

Foodborne illnesses, which can be prevented by proper food handling and preparation, affect millions of Americans each year. Seafood safety concerns were exacerbated throughout the U.S. following the 2010 Gulf oil spill. Furthermore, it was determined that the U.S. Sweet Potato Industry did not have a crisis communication response plan in place and one was needed. Commercial processors and food handlers are required to have food safety certification training which the LSU AgCenter provides.

What has been done

An Extension specialist developed a video and conducted trainings on seafood sensory evaluation. Media efforts targeted food safety outbreaks and seafood safety issues. Training in Sanitation Control Protocol (SCP), Seafood HACCP, and Meat and Poultry HACCP, Better Process Control School (BPCS for canned and acidified foods) and food handling (ServSafe) was conducted. Faculty and sweet potato industry representatives participated in a national workshop on responding to food safety incidents.

Results

In response to the Gulf oil spill, state wildlife and Ag officials were trained on sensory evaluation of seafood and the state seafood response plan was strengthened. Consumers became knowledgeable about seafood safety through media channels.

A Specialist was appointed Principal Editor of the HACCP Seafood Compendium and processors were assisted with HACCP and SCP plans.

Entrepreneurs were helped in establishing their businesses. Processors were assisted in correcting regulatory deficiencies to meet requirements to continue operation. Processors added new markets.

Participants received food safety certification training: HACCP-ca. 60; SCP-ca. 25; BPCS-ca. 60; ServSafe-65.

Faculty and producers worked on developing a plan to address the potential impacts of a food safety incident on the sweet potato industry.

Louisiana consumers (30,000) learned recommended food safety practices. An estimated 100,000 Louisiana consumers gained food safety knowledge via mass media channels.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #2

1. Outcome Measures

Identify ways to minimize food safety threats related to Louisiana-produced food products through research.

2. Associated Institution Types

- 1862 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)

The majority of illness outbreaks linked with oyster consumption from approved waters is attributed to *Vibrio vulnificus* and *Vibrio parahaemolyticus*. Due to the foodborne illnesses caused by consuming raw oysters the FDA may require all raw oysters to have a post-harvest treatment to reduce *Vibrio* species. Furthermore, there is a lack of rapid, accurate, and cost-effective detection methods for foodborne pathogens in seafood products.

What has been done

Several post-harvest treatments were evaluated for the reduction of *V. vulnificus* and *V. parahaemolyticus* in Gulf oysters (*Crassostrea virginica*) that included the use of cryogenic-freezing, blast-freezing and low heat treatment followed by placing oysters in an ice bath. Rapid identification methods for detection of *V. vulnificus* strains were evaluated included molecular-based assays using the loop-mediated isothermal amplification and a multiplex polymerase chain reaction (PCR) assay. Research on coating materials to extend the shelf life of fresh cut produce was also conducted.

Results

Cryogenic-freezing significantly reduced both *Vibrio* species in oysters compared to blast-freezing by 5 logs compared to 4 logs after 30 days of storage, respectively. Inoculated oyster meat samples were placed in water baths for 12 minutes at four different temperatures 40, 45, 50 or 55°C and then rapidly cooled in an ice bath. The most effective treatment was 55°C that reduced the both *Vibrio* species counts to non-detectable levels on day 0, 1 and 2. The application of cryogenic-freezing and low heat treatment to shucked oyster meat can be promising post-harvest treatments for control of *Vibrio* species in oysters. Two rapid, sensitive, specific, and quantitative molecular testing methods for *V. vulnificus* strains have been successfully developed. This research provides important tools to better assess the microbial safety risks in foods, so that the industry and regulatory agencies could provide timely control in case of a contamination. The antimicrobial activity of chitosan and its oligomers against a wide range of food-borne bacteria makes it a potential food preservative of natural origin for fresh-cut fruits and vegetables.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Consumer Horticulture, Ornamentals & Turf

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	5%		20%	
204	Plant Product Quality and Utility (Preharvest)	5%		20%	
205	Plant Management Systems	80%		40%	
213	Weeds Affecting Plants	10%		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	30.6	0.0	23.0	0.0
Actual	13.4	0.0	5.2	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
253378	0	75318	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
253378	0	75318	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1144122	0	2133403	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activity included appropriate extension and research activities such as result demonstrations, volunteer training, field days, studies, individual consultations, group meetings, mass media, publication development and extensive use of Web technology and social media outlets to reach target audiences.

2. Brief description of the target audience

Horticulture professionals, home gardeners, nursery growers, Master Gardener volunteers and students and related agribusiness clientele.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	86136	119173	1137	305

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	5	15	20

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Clientele reached
Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of Web page views

Year Actual

2010 1636824

Output #3

Output Measure

- Number of Web page visits

Year	Actual
2010	1407653

Output #4

Output Measure

- Number of Louisiana Master Gardeners completing training series

Year	Actual
2010	363

Output #5

Output Measure

- Number of service hours contributed by all Louisiana Master Gardeners

Year	Actual
2010	55841

Output #6

Output Measure

- Number of additional educational publications produced

Year	Actual
2010	10

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of clientele adopting recommended practices
2	Louisiana Master Gardener volunteers supplement the delivery of consumer horticulture program to clients.

Outcome #1

1. Outcome Measures

Percentage of clientele adopting recommended practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	70	78

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Turf and ornamental professionals desire information on production improvements, better maintenance options, pest management and best management practices. Home gardeners need information on species and cultivar selection, cultural practices, and weed management. Louisiana retail garden centers desired an ornamental plant promotion program.

What has been done

The first year of the Louisiana Super Plants promotion program for landscape plants was completed. Six high schools participated in the Athletic Field of Excellence Program. Turfgrass management studies addressed establishment and maintenance best management practices. Biodegradable containers were evaluated for greenhouse and landscape performance. Ornamental plant evaluations included "People's Choice" winners. Evaluation of greenhouse insect management products expanded. Horticulture disease diagnosis efforts were promoted.

Results

Extension's "Get It Growing" consumer horticulture effort produced 260 radio stories, 52 news articles and 52 television stories. Sustainable landscape news articles were distributed weekly. Improved dollarweed control was observed when herbicides were applied in the fall. The Louisiana Super Plants promotion increased sales 200-300% of the named herbaceous perennials. Sales of the Super Plant shrubs increased over 40%. Nitrogen application rates on coleus were refined for production and landscape settings. Sand topdressing regimes were developed for hybrid bermudagrass athletic fields. Disease diagnosis for home gardeners expanded. Crop safety trials expanded labels for several new insecticides. Direct plant biodegradable containers provided suitable alternatives to plastic or compostable containers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
213	Weeds Affecting Plants

Outcome #2

1. Outcome Measures

Louisiana Master Gardener volunteers supplement the delivery of consumer horticulture program to clients.

2. Associated Institution Types

- 1862 Extension

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)

Reduced personnel resources coupled with increased interest in consumer horticulture, home gardening and home grounds has exacerbated the need for trained volunteers to assist in the delivery of quality educational horticulture programs. The Louisiana Master Gardener (LMG) program meets this demand.

What has been done

There are 23 Louisiana Master Gardener programs in the state which encompass 44 parishes and represent 96% of Louisiana's population centers. In FY 2010, 363 new volunteers were trained, bringing the total of LMG volunteers to 1756. Volunteer opportunities designed to meet parish needs were identified and activities approved by LMG parish coordinators.

Results

The increased need for consumer horticulture information and improved public access to the LSU AgCenter has proven that highly trained LMGs presenting research-based information are recognized in their community as a primary resource for unbiased information. In 2010, 1728 active Louisiana master gardeners donated a total of 55,841 hours to extension educational projects and made over 1.5M contacts. This effort reflects the equivalent of 34.9 FTEs and resulted in increased human capacity of 16.2% in this program area. The economic value of this service to the state is over \$1.3M.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Family Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	0%		30%	
610	Domestic Policy Analysis	0%		30%	
611	Foreign Policy and Programs	0%		20%	
724	Healthy Lifestyle	65%		0%	
801	Individual and Family Resource Management	10%		0%	
802	Human Development and Family Well-Being	25%		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	25.0	0.0	5.0	0.0
Actual	13.3	0.0	1.4	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
251489	0	85041	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
251489	0	85041	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1135590	0	189540	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Appropriate extension and research activities focused on training childcare providers, improving parenting skills and helping families cope with crises. Methods included workshops, classes, and effective use of social media and mass media.

2. Brief description of the target audience

General public including low income families, the elderly, youth, early childhood educators, parents/guardians/caregivers/, employers, business owners and the incarcerated.

Community leaders including educators, elected officials, AgCenter faculty, AgCenter partners, gatekeepers, local government, media representatives, policymakers, and master volunteers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	31462	968579	4782	330

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	5	6

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Clientele reached

Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of Web page views

Year	Actual
2010	339105

Output #3

Output Measure

- Number of Web page visits

Year	Actual
2010	294314

Output #4

Output Measure

- Number of child care provider certificates issued

Year	Actual
2010	7596

Output #5

Output Measure

- Number of child care provider trainings conducted

Year	Actual
2010	308

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Parents implement positive parenting practices
2	Implementation of developmentally appropriate experiences by early childhood educators.
3	Increased family resiliency in response to long-term stress and crisis.

Outcome #1

1. Outcome Measures

Parents implement positive parenting practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates effective parenting practices are related to children's school achievement and later success in life. Brain research indicates the first three years of life are the most critical in human development. Early literacy and the creation of a learning and nurturing environment even before birth make significant differences to the brain's development. Understanding child development and how to practice nurturing parenting behaviors are primary skills to be taught.

What has been done

Significant parenting outreach focused on reaching parents regarding best practices in parenting during child's infancy based on brain growth and development. Gaining knowledge and skill in child nurturance and child development were addressed. Agents collaborated with state agencies and other organizations to present research and evidence-based parenting curricula to improve parenting skills. The curricula used were audience-specific and focused on individual needs.

Results

Little Bookshelf Program-1375 families with a newborn located in 13 parishes participated in this family literacy program with each family receiving a library of appropriate children's books and literacy information. Evaluation reveals that 76% of parents of infants reported reading books with their baby every day; 24% of parents reported reading books to their baby once a week.

The Parents Preparing for Success program is a welfare-to-work program which targets expectant mothers and families with infants under 1 year of age who are receiving public assistance. 49.7% (n=142) of parents participating in this program in 52 parishes learned ways to create a nurturing environment and foster a sense of security for infants which often leads to reduced delinquency in children and youth. 23% of parents learned to recognize normal and abnormal behaviors of infants. Twenty-one percent of parents learned effective means of guiding and disciplining infants

and participants increased their knowledge of effective financial management practices by 54%. Many filed for and received previously-unclaimed Earned Income Credits of up to \$5,000.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #2

1. Outcome Measures

Implementation of developmentally appropriate experiences by early childhood educators.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

There is a strong connection between high quality early childhood programs and later success in school. There are an estimated 20,000 child care providers in the state and over 215,900 children are either in child care or in need of child care. Louisiana's child care regulations fall short in meeting standards for high quality child care as evidenced by research.

What has been done

Classes and training for early childhood staff to obtain their Child Development Associate (CDA) Credential were developed. Topics varied based on needs of the children as identified by the providers and within the guidelines recommended by the National Association for the Education of Young Children and the Council for Professional Recognition--CDA National Credentialing Program.

Results

Three hundred and eight (308) trainings were conducted by 13 agents for child care providers (CCP). Certificates were awarded to 7,596 CCP. Evaluation of program indicated child care providers showed statistically significant knowledge gain. Participants used the information they

learned, implementing more recommended care practices that are beneficial to children.

Observational research, conducted prior to and following the training series, found average positive child caregiver responsive behaviors increased and average negative child caregiver non-responsive behaviors decreased by providers after attending the trainings. Also, the increase in positive responsive behaviors and the decrease in negative non-responsive behaviors were maintained by the participants six weeks after the training series ended. Of 57 child care providers who completed a series of 120 hours of training, 40 applied for their CDA, 35 received their CDA and 5 are waiting for their results.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #3

1. Outcome Measures

Increased family resiliency in response to long-term stress and crisis.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

Louisiana suffers from a severe budget crisis and lingering effects of the Gulf oil spill. Coastal communities have not completely recovered from Hurricanes Katrina, Rita, Gustav and Ike. A family's ability to recover from a crisis is influenced by additional life stressors including low income and family perceptions and compounded by repeated crises. Family goals, problem solving skills, and support networks impact its adaptation to long-term stress and crisis. Divorces, substance abuse, depression, etc. are often triggered by crises.

What has been done

A FCS Disaster Special Response team joined state and Gulf Coast Extension colleagues in other disciplines (Sea Grant, economics and fisheries) to address issues facing oil impacted communities. Adaptive strategies used by families after an oil spill were identified and then compared and contrasted to those used after natural disasters. Teams gleaned applicable strategies from Exxon Valdez victims to replicate in Louisiana. Relevant information was gathered and disseminated to communities.

Results

FCS Oil Spill Leadership (OSL) responded by rapidly developing a plan for outreach to families. FCS faculty participated in state task forces, conferences, committees, etc. to jointly address the crisis. In a multi-state effort, FCS collaborated on the development of a special needs grant proposal to NIFA and secured \$200,000 to address issues facing fishing industry families. The FCS OSL team planned the launch of "Managing in Tough Times" outreach program in September 2010. Public Information Team updated and added disaster information for families as appropriate.

Data indicated the full effects of repercussion from natural disasters/oil spill disasters are not limited to the immediate areas but have far-reaching impacts. It is yet to be determined from information currently being collected and analyzed if families after the oil spill experienced the same roller coaster pattern of recovery as the majority of families after natural disasters as reported in Knowles, Sasser and Garrison (2010).

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Youth Development

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	0%		70%	
724	Healthy Lifestyle	10%		0%	
806	Youth Development	90%		30%	
	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	90.0	0.0	0.0	0.0
Actual	94.8	0.0	0.3	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
1791408	0	2748	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1791408	0	2748	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
8089055	0	61414	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Age appropriate educational experiences were provided for Louisiana youth in three focus areas: Citizenship, Healthy Living and Science, Engineering and Technology (SET). Note: Much of the nutrition-related activity in the Healthy Living initiative is reported under the Childhood Obesity federal initiative

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area.

2. Brief description of the target audience

Louisiana youth ages 9-19 as well as youth and adult volunteers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	174390	142902	801669	307912

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	10	3	13

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Youth reached
Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of Web page views

Year	Actual
2010	2653354

Output #3

Output Measure

- Number of Web page visits

Year	Actual
2010	2181340

Output #4

Output Measure

- Number of youth participating in service projects

Year	Actual
2010	44000

Output #5

Output Measure

- Number of hours of service performed by youth

Year	Actual
2010	16360

Output #6

Output Measure

- Number of teens serving on 4-H state leadership boards

Year	Actual
2010	130

Output #7

Output Measure

- Number of current NIFA 4-H Programs of Distinction designations

Year	Actual
2010	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Youth to be actively engaged in learning and given the opportunity for mastery Youth to become engaged members of the community Adults and youth gain knowledge and skills associated with personal, organization, & community leadership
2	Youth develop and strengthen skills which promote healthy living.
3	Youth develop and strengthen skills that will lead them to be contributing citizens within their community (citizenship).
4	Increased scientific and technology literacy in youth through hands-on scientific learning and discovery.

Outcome #1

1. Outcome Measures

Youth to be actively engaged in learning and given the opportunity for mastery Youth to become engaged members of the community Adults and youth gain knowledge and skills associated with personal, organization, & community leadership

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Youth develop and strengthen skills which promote healthy living.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

According to KIDS COUNT, Louisiana has ranked 49th in the nation on childhood health and well-being since 2002. A Pennington Biomedical Research Center study reported more than 47% of Louisiana children, ages 2 -19, are overweight or obese. Louisiana received a D on the Report Card on Physical Activity and Health for Children and Youth. Also, from 1995-2003, over 400,000 youth under 20 years of age across the country were injured in ATV crashes and treated for nonfatal injuries.

What has been done

NOTE: Most 4-H efforts to address the obesity epidemic are reported in the Childhood Obesity portion of this report. The Wal-Mart Healthy Living Program reached 5,000 individuals: 2,471 youth and 214 adults received over 6 hours of instruction through school enrichment. Over 150 4-H members participated in a State "Tour de Food and Fitness" Camp taught by the 4-H Food and Fitness Board, 1,628 youth participated in the Summer Camp Nutrition Track and 123 youth participated in parish day camps. Inner city youth with no summer job participated in a summer-gardening education program. Over 3,000 youth received ATV safety training and over 400

helmets were distributed with 250 youth attending a 4-hour ASI Ridercourse Training.

Results

Youth participating in the summer 4-H Camp Nutrition Track reported 94% knew more about foods and how those fit into healthful meal choices; 66% knew the number of minutes of exercise needed for their age group; 93% planned to drink more water, and 89% planned to eat more fruits and vegetables. In the "Next 4-H Food Star" program, 96% of the youth explored career possibilities in the food service industry; 91% learned about food safety and sanitation and 82% of the youth gained a greater understanding of Louisiana Seafood products. Skill building in summer gardening program positively impacted fruit and vegetable intake of inner city high school youth. As a result of ATV Training, there was a 23% increase in youth understanding that more than one rider was dangerous and 75% increase in youth knowing that they need to wear safety gear. Seventy-one percent learned how to operate an ATV safely.

4. Associated Knowledge Areas

KA Code	Knowledge Area
610	Domestic Policy Analysis
724	Healthy Lifestyle
806	Youth Development

Outcome #3

1. Outcome Measures

Youth develop and strengthen skills that will lead them to be contributing citizens within their community (citizenship).

2. Associated Institution Types

- 1862 Extension

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)

With national volunteer rates going up (26.8%), only 20% of Louisiana citizens volunteer leading to a rank of 47th in nation. While youth and adult volunteers are serving to make a difference, there remains an unclear yet blatant sense among most that volunteer efforts matter little to the civic life and health of communities. Americans express despair over the drift away from core civic

values to emphasize "winning at all costs." Greed and selfishness eclipse family, community, and responsibility.

What has been done

Over 112,000 youth and adults address community needs through service projects and character programs. Nearly 44,000 youth participate in service projects ranging from the environment, poverty, and literacy to military support projects. The Reading to the Heart Program (RTH) reached 134 youth with literacy lessons and over 5,000 with literacy events. Over 130 teens serve on 6 State Leadership Boards that offer youth opportunities to develop life skills.

Results

Service projects helped 88,000 individuals and raised \$48,500. Youth served 16,360 hours valued at \$341,106. In service-learning projects, 92% of youth had a better understanding of community problems and 95% set a good example for others to follow. Based on previous research, 92% of youth who participated in a service learning project will most likely have higher moral standards and 95% are more likely to treat others in a courteous way.

Over 3,623 youth collected 5.3 million pop tabs adding up to 6,600 pounds and a \$5,204 donation to the Ronald McDonald House Charities.

Over 325 youth participated in the Louisiana 4-H Junior Leadership Conference resulting in 60% being able to communicate goals and objectives to group members and 69% feeling comfortable being a group leader. In the RTH Program, 88% of guardians said the program had a positive influence on their children's self-confidence toward reading skills and 87% of the community literacy partners indicated the program increases a child's reading and writing skills.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Increased scientific and technology literacy in youth through hands-on scientific learning and discovery.

2. Associated Institution Types

- 1862 Extension

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)

America faces a crisis in its ability to keep up with the increasing demand for professionals in science, engineering and technology (SET). Youth in Louisiana are ill-prepared to enter careers in SET. In Louisiana, the percentages of 4th graders with below basic test scores were: Basic Math-28%; Science-43% and Reading-48%. The percentages of 8th graders with below basic test scores were: Basic Math-38%; Science-53% and Reading-36%. Less than half (44%) of youth had computers in their home.

What has been done

Supported by 61 volunteers, the First Lego League program reached 231 youth with 298 hours of training. Over 130 youth took part in 2 summer robotics trainings. Over 187 campers participated in Louisiana Outdoor Science & Technology Camp (LOST). The Youth Wetlands Week (YWW) Program reached 80,000 students. Louisiana 4-H Seeds of Service School Garden Project (SOSGP) involved over 1,400 students from 11 parishes.

Results

Youth participating in Robotics activities reported a better understanding of robotics (82%) and successfully applied problem-solving skills to identify solutions to problems presented (86%). At LOST Camp, 87% of youth agreed science is of great importance to a country's development; 84% said they learned new things about science at this camp and 82% agreed that science is useful in helping to solve the problems of everyday life.

In the SOSGP Program, 96% of the schools had not had gardens before and 83% of the classrooms used the garden as a science tool and 61% supported math instruction. Louisiana Master Gardeners and other trained volunteers donated over 670 hours valued at over \$13,500 and \$4,100 in travel to this project. In-kind donations were over \$4,400.

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Forestry and Forest 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
102	Soil, Plant, Water, Nutrient Relationships	5%		10%	
112	Watershed Protection and Management	5%		5%	
123	Management and Sustainability of Forest Resources	65%		35%	
135	Aquatic and Terrestrial Wildlife	15%		20%	
403	Waste Disposal, Recycling, and Reuse	5%		10%	
511	New and Improved Non-Food Products and Processes	0%		20%	
604	Marketing and Distribution Practices	5%		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	5.4	0.0	9.0	0.0
Actual	5.4	0.0	14.5	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
102220	0	678708	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
102220	0	678708	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
461574	0	4977900	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activity included extension and research efforts such as workshops, result demonstrations, individual consultations, and studies.

2. Brief description of the target audience

Forest landowners, forest managers, arborists and loggers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	15046	42244	15871	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	2	35	37

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Clientele reached
Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of Web page views

Year	Actual
2010	246251

Output #3

Output Measure

- Number of Web page visits

Year	Actual
2010	212107

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of clientele adopting recommended practices

Outcome #1

1. Outcome Measures

Percentage of clientele adopting recommended practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	65	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Forest management effects on hydrology, water, and soil quality, restoration of degraded coastal forests, long-term forest productivity & suppression of invasive plants & wildlife remain concerns of Louisiana's \$3 billion forest products industry. Mills have closed from depressed housing markets. Improvements in volume & efficiency of forest products manufacturing, recycling, marketing and worker safety are needed. Emerging biofuel markets may impact forest management regimes.

What has been done

Extension programs focused on feral hog management; estate planning; tax issues; emerging biofuel markets; herbicide use; logging and burning safety; and sustainability. Research focused on wetland forests hydrology changes; carbon storage and nutrient cycling; creating new wood products from decommissioned preservative-treated wood; development of short-rotation forest plantations and agroforests for biofuel production; and worksite safety among loggers and arborists.

Results

Seventy-five per cent of participants in extension forestry workshops adopted recommended practices resulting in a net value of \$3,587 per person. Average workshop attendance was 114. Data on harvesting effects on water quality led to closer monitoring of sediment runoff. Louisiana's coastal forests benefitted from improved regeneration strategies. Forest management statewide benefitted from data on management effects on soil and water quality, long-term tree growth, invasive species control, and reestablishment of indigenous vegetation. Adoption of log scanning technology developed to improve conversion efficiency is being explored by sawmills. A US patent is pending for new methods to remove heavy metals in decommissioned preservative-treated wood. New composite products were developed, with one resulting patent and

commercialization. Wood energy research identified preliminary opportunities for Louisiana forest landowners. Herbicide labeling was updated to reduce eucalyptus plantation establishment costs by 40%.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
135	Aquatic and Terrestrial Wildlife
511	New and Improved Non-Food Products and Processes
604	Marketing and Distribution Practices

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Community Development

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	0%		15%	
721	Insects and Other Pests Affecting Humans	10%		45%	
722	Zoonotic Diseases and Parasites Affecting Humans	0%		15%	
802	Human Development and Family Well-Being	0%		5%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	75%		5%	
903	Communication, Education, and Information Delivery	15%		15%	
	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	11.0	0.0	5.0	0.0
Actual	9.6	0.0	5.5	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
181200	0	150359	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
181200	0	150359	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
818205	0	1527434	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Extension and research activities designed to reduce persistent poverty through entrepreneurship, agribusiness development, leadership and broadband educational programs. Louisiana Center for Rural Initiatives established. Additional external funding sought to support initiative.

2. Brief description of the target audience

General public, elected officials, small business owners & governmental agencies, primarily in the Delta region of the state or northeast Louisiana.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	23628	8767	15262	332

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	3	6	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Clientele reached
Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of Web page views

Year	Actual
2010	337348

Output #3

Output Measure

- Number of Web page visits

Year	Actual
2010	276208

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of clientele who become more civically engaged
2	Entrepreneurs and community leaders gain knowledge of sustainable economic development strategies in relationship to operating an e-business and leadership.

Outcome #1

1. Outcome Measures

Percentage of clientele who become more civically engaged

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Entrepreneurs and community leaders gain knowledge of sustainable economic development strategies in relationship to operating an e-business and leadership.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

Rural Louisiana suffers from a lack of healthcare, access to education and broadband internet connectivity, and overall has been marked by persistent poverty for decades. One out of every four people in rural Louisiana lives below poverty and roughly three quarters of our rural parishes are defined as persistent poverty counties/ parishes. These conditions also make it difficult for our rural coastal parishes to be resilient in the face of natural disasters.

What has been done

The LSU AgCenter's on-campus Louisiana Center for Rural Initiatives (LCRI) and off-campus Delta Rural Development Center (DRDC) delivered research-based educational programs aimed at reducing persistent poverty conditions in rural Louisiana. These included healthcare and rural public finance research and entrepreneurship, agribusiness development, leadership and broadband educational programs.

Results

DRDC has specialized in the delivery of broadband (high-speed Internet) demonstration projects in the Louisiana Delta Region, primarily northeast Louisiana. Through the collaboration with the

Louisiana Broadband Alliance, DRDC faculty recently received credit for contributing to the acquisition of more than \$80 million in federal broadband funding that will bring broadband awareness education and a newly installed fiber optic network covering 1,600 miles across 21 parishes, 12 of which are located in the Louisiana Delta Region. This project will benefit more than 100,000 households in the region and create significant economic development opportunities. Research has identified key factors affecting the inefficiency in rural hospital healthcare delivery in order to maintain and improve access to residents. Further, rural public finance research has identified financial reserve levels necessary for coastal parishes to cover tropical disaster emergency costs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
610	Domestic Policy Analysis
721	Insects and Other Pests Affecting Humans
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Human Nutrition and Food (Adult)

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	0%		40%	
502	New and Improved Food Products	0%		30%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		10%	
702	Requirements and Function of Nutrients and Other Food Components	0%		20%	
703	Nutrition Education and Behavior	100%		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	18.0	0.0	9.0	0.0
Actual	1.4	0.0	12.6	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
26642	0	410480	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
26642	0	410480	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
120299	0	2849269	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research to identify and/or develop familiar foods which are reformulated to deliver higher fiber and anti-inflammatory ingredients to help control obesity and the negative side effects of obesity while minimizing changes in food choices.

2. Brief description of the target audience

Ultimate target audience is adult consumers who want to limit consumption of inflammatory foods.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	108547	98284	0	0

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

Patent Applications Submitted

Year: 2010

Actual: 4

Patents listed

Resistant Starch with Cooking Properties Similar to Untreated Starch
 Resistant Starch with Cooking Properties Similar to Untreated Starch
 Isolation of Aflatoxin-Free Lutein from Aflatoxin-Contaminated Plants and Plant Products
 Isomaltooligosaccharides to Inhibit Avian Pathogenic Intestinal Bacteria

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	16	16

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Clientele reached
 Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of Web page views

Year	Actual
2010	811316

Output #3

Output Measure

- Number of Web page visits

Year	Actual
2010	693512

Output #4

Output Measure

- Number of individuals completing Smart Portions classes

Year	Actual
2010	400

Output #5

Output Measure

- Number of individuals completing DEAR classes

Year	Actual
2010	650

Output #6

Output Measure

- Number of families completing Smart Choices classes

Year	Actual
2010	1922

Output #7

Output Measure

- Number of Master Nutrition Volunteers certified

Year	Actual
2010	12

Output #8

Output Measure

- Number of additional educational publications produced

Year	Actual
2010	18

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Participants are knowledgeable about and follow healthy weight management practices
2	Identify and/or develop familiar foods which are reformulated to deliver higher fiber and anti-inflammatory ingredients to help control obesity and the negative side effects of obesity while minimizing changes in food choices.

Outcome #1

1. Outcome Measures

Participants are knowledgeable about and follow healthy weight management practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	200	97

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Louisiana residents suffer from chronic diseases such as heart disease, stroke, cancer and diabetes at rates higher than the national average, while fruit and vegetable intake and participation in physical activity is below the national average. Approximately 7% of adults have been diagnosed with diabetes and 1 in 4 adults is obese. Louisiana has the fourth highest cardiovascular death rate in the nation, accounting for almost 40 percent of all deaths in the state. Maintaining a healthy lifestyle by eating well and being physically active can impact greatly these startling statistics.

What has been done

Smart Portions, a series of sessions that address nutrition, physical activity and eating habits for a healthy lifestyle was taught across Louisiana. DEAR (Diabetes Education Awareness Recommendations) classes were conducted for Louisiana adults with diabetes or who had a family member with diabetes to educate them about managing the disease. Smart Choices, a Community Nutrition Education Program teaching the principles of eating based on the Dietary Guidelines for Americans, money management and food safety, was taught in 60 parishes. The Master Nutrition Volunteer program, a program that certifies individuals to teach nutrition classes to the public, was conducted in Rapides parish.

Results

Four hundred adults participated in Smart Portions classes and learned the principles of a healthy lifestyle to prevent overweight and obesity. DEAR classes enrolled 650 Louisiana adults with diabetes or who had a family member with diabetes and learned about managing the disease. The Community Nutrition Program Smart Choices enrolled 1922 families for a series of classes. There were significant improvements in dietary intake of 6 ounce equivalents of grains from 31% at baseline to 42% at the end of the series; in fruit intake of 2 cups from 12% to 19%; vegetable intake of 3 cups from 12% to 18%; and dairy intake of at least 2 cups from 15.5% to 23%. A

positive dietary change was seen in 96.6% of clients at exit. There was also an increase in physical activity to 30-60 minutes a day from baseline to graduation from 22.7% to 24%. A positive change in physical activity was seen in up to 17.9% of participants. The Master Nutrition Volunteer program certified 12 volunteers who are required to each contribute 30 hours in volunteer hours at a total value of over \$7,500.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #2

1. Outcome Measures

Identify and/or develop familiar foods which are reformulated to deliver higher fiber and anti-inflammatory ingredients to help control obesity and the negative side effects of obesity while minimizing changes in food choices.

2. Associated Institution Types

- 1862 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)

Obesity is a primary negative factor influencing resulting in Louisiana ranking 47th in overall health, 7th in diabetes and 8th in high blood pressure. Type 2 diabetes is increasing in youth at an alarming rate. The majority of the side effects of obesity are related to chronic inflammation. Excess body fat results in the development of pro-inflammatory cytokines. Compounds found in fruits, vegetables, coffee and chocolate can help prevent the formation of the inflammatory compounds. Unique approaches to delivery of these compounds will help delay the negative side effects of obesity.

What has been done

Free fatty acids were studied for pro-inflammatory activity. A variety of foods including purple rice, coffee, cane berries, chocolate and coffee were tested for anti-inflammatory activity in a cell culture system. Test materials were also tested in *C. elegans* for decreasing fat deposition. The berry fibers were tested for fermentability to determine their prebiotic potential.

Results

Palmitic acid, which is released from adipocytes induces inflammatory responses in cardiovascular cells. We also demonstrated that trans and oxidized fatty acids more inflammatory than palmitic acid. When the cells are inflamed from these fatty acids polyphenolic compounds show limited activity in reducing the inflammation. When the cells are pretreated with catechins and anthocyanins they become highly resistant to pro-inflammatory fatty acids. The polyphenolics reduced fat deposition in *C. elegans* suggesting reducing rate of fat deposition in higher animals. Similarly beans have been shown to reduce fat deposition in *C. elegans*. Cane berry fiber is partially fermented to butyric acid which suggests that the fiber will increase production of satiety peptides helping slow weight gain. Bean extended ground beef resulted in improved blood lipid profiles in hamsters. The potential of using beans as a partial replacement for ground meat is being presented to extension agents for delivery to general public. A clinical trial is being conducted with beans substituting for ground meat.

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
702	Requirements and Function of Nutrients and Other Food Components

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

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
607	Consumer Economics	0%		100%	
801	Individual and Family Resource Management	100%		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
Actual	15.7	0.0	0.4	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
297214	0	18823	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
297214	0	18823	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1342061	0	84754	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Extension outreach using group and individual methods and mass media as appropriate. Web-based technology, individual consultations, collaboration-building and sustainability efforts also utilized. Educational outreach efforts in home-buyer education, financial management, saving, investing, and taxes.

2. Brief description of the target audience

General public including home buyers, homeowners, educators, low income, the elderly, youth, families, employees, employers, business owners, financial professionals, business groups and the incarcerated. Community leaders targeted include: educators, elected officials, AgCenter faculty, AgCenter partners, gatekeepers, local government, media representatives, policymakers, and master volunteers.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	38007	13626	25157	1685

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	12	12

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2010	202979

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2010	168416

Output #3

Output Measure

- Number of individuals reached with homebuyer education classes

Year	Actual
2010	250

Output #4

Output Measure

- Percentage of homebuyer education program graduates that became homeowners within 6 months of program completion

Year	Actual
2010	28

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number/percentage of participants who gain greater financial independence and literacy by learning and practicing improved management of financial resources.

Outcome #1

1. Outcome Measures

Number/percentage of participants who gain greater financial independence and literacy by learning and practicing improved management of financial resources.

2. Associated Institution Types

- 1862 Extension
- 1862 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)

Four hurricanes damaged/destroyed nearly 1/3 of LA's housing units. Over 10% of all LA mortgages are in some degree of distress and foreclosure rates continue to rise. LA students scored 45.3% on a national survey of personal finance. LA residents lose many dollars each year by failing to claim the federal Earned Income Credit (EIC). High rates of recidivism among newly released offenders create great tax burden. Disasters, slow economic growth, business loss and economic crisis have impacted LA families.

What has been done

Series of 12-hr home buyer education series reached over 250 potential homebuyers and expanded home ownership among individuals/families who had been displaced by disaster and others. Foreclosure prevention task force expanded, trained & mobilized. Homeowner ed/counseling sessions conducted. Workshops reached 200+ educators who taught Financial Management to 19,400+ students/ clients. EIC research produced book chapter and refereed journal article. Collaborative EIC outreach programs expanded. Fin. Mgt. series delivered to offenders. 100+ Managing in Tough Times documents posted online. Outreach/media programs expanded.

Results

28% of home buyer education program graduates became homeowners within 6 months. Most qualified for \$5,000-\$10,000+ in down payment assistance. 90% checked credit reports and changed saving and spending habits. 1000+ homeowners learned about retention strategies to avoid foreclosure. Evaluation suggests that educators' perception of their ability to teach financial management topics increased 45%. Collaborative outreach efforts over five years increased number of EIC recipients by 51,790 to 536,826 with the average current benefit being \$2540/recipient. Total state benefit increased over \$282 million to \$1.363 billion. 572+ offenders

have adopted skills for success in society. 93% learned how to develop a budget. 20 volunteers have been trained and are delivering series of classes to offenders. Families adopted recommended financial recovery strategies to stay afloat. Educators nationwide utilized relevant AgCenter MITTnet resources to implement community-based educational programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
607	Consumer Economics
801	Individual and Family Resource Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The Gulf oil spill and the state's plummeting economy significantly influenced the LSU AgCenter's program direction during FY2010. Competition for limited resources and competing public priorities resulted in a shifting of programmatic efforts to address the most pressing needs of Louisiana residents.

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

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Animals and Animal Production Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	24.3	0.0	30.0	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

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	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

- Clientele reached
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	Percentage of producers adopting extension recommended practices

Outcome #1

1. Outcome Measures

Percentage of producers adopting extension recommended practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action 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
{No Data}	null

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

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

Crops and Crop Production Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	27.0	0.0	56.0	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

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	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

- Clientele reached
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	Percentage of producers adopting best management practices

Outcome #1

1. Outcome Measures

Percentage of producers adopting best management practices

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

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

Environment and Natural Resources

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	18.7	0.0	14.0	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

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	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

- Clientele reached
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	Clientele adopting recommended practices

Outcome #1

1. Outcome Measures

Clientele adopting recommended practices

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

Brief Explanation

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

Evaluation Results

Key Items of Evaluation