

2009 Louisiana State University Combined Research and Extension Annual Report of Accomplishments and Results

Status: Accepted

Date Accepted: 06/25/2010

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 educational 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.

In realizing this mission, the LSU Agricultural Center in FY 2009 directed research and extension education programs under twelve 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 and Consumer Economics.

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 educators.

Extension Program Summary

Educational programs of the Louisiana Cooperative Extension Service were conducted in all main programs by Extension faculty located in academic departments on the LSU Baton Rouge campus, by regional faculty and by parish-(county) based faculty in each of Louisiana's 64 parishes. 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. Extension numbers contained within this report are a reflection of the effort reported by extension faculty.

*****Note that three program areas defined in previous Federal Reports--Animals and Animal Production Systems, Crops and Crop Production Systems and Environment and Natural Resources--have been incorporated into Global Food Security and Hunger, Climate Change and Sustainable Energy, leaving those previously-planned sections of this report blank.**

Total Actual Amount of professional FTEs/SYs for this State

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	325.0	0.0	152.0	0.0
Actual	330.0	0.0	159.1	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 of program areas on a rotational basis. Stakeholders provide annual reviews of LSU AgCenter programs through the advisory leadership system.

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 as well as subject matter specific advisory groups which meet on an as-needed basis and various grass roots meetings stakeholders across the state. Internally, 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 External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys
- Other (Grass roots meetings)

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 outreach and research efforts or because someone knows of the prospective stakeholders interest in a particular issue or targeted outcome. Focus groups and listening sessions are being used more frequently to identify stakeholder groups and individuals.

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 2009. 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 were conducted across the state to gain input into the budget crisis.

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:

- Increasing profitability in crop and animal production systems
- Minimizing the financial impact of environmental regulations on crop and animal production systems
- Incidence of obesity and chronic diseases across the state
- Teaching effective parenting skills
- Providing quality early childhood education
- Family resiliency in times of crisis
- Providing positive activities for youth both in and out of school
- Family financial management including debt reduction and credit management

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
4939449	0	3431023	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	5220868	0	2726027	0
Actual Matching	5220868	0	2726027	0
Actual All Other	26373099	0	58349978	0
Total Actual Expended	36814835	0	63802032	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from				
Carryover	4099358	0	154272	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
12	Consumer Economics
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%		5%	
212	Pathogens and Nematodes Affecting Plants	5%		10%	
213	Weeds Affecting Plants	5%		5%	
215	Biological Control of Pests Affecting Plants	5%		5%	
216	Integrated Pest Management Systems	5%		5%	
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%		10%	
311	Animal Diseases	5%		5%	
601	Economics of Agricultural Production and Farm Management	5%		5%	
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: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	55.0	0.0	102.8	0.0

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

Extension		Research	
Smith-Lever 3b & 3c 1130503	1890 Extension 0	Hatch 1851087	Evans-Allen 0
1862 Matching 1130503	1890 Matching 0	1862 Matching 1851087	1890 Matching 0
1862 All Other 5402564	1890 All Other 0	1862 All Other 38627600	1890 All Other 0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

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

Livestock producers, row crop producers, commercial fruit and vegetable producers, crawfish farmers, Louisiana families living below the poverty level

V(E). Planned Program (Outputs)**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual	205792	133901	77096	9128

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

Year: 2009

Plan:

Actual: 7

Patents listed

Sweetpotato Plant Named 'Murasaki-29'

Herbicide Resistant Rice

Hybrids of, and Cultivars Derived From the Rice Cultivar Designated 'CL151'

Resistance to Acetolactate Synthase-Inhibiting Herbicides

Biomimetic Seed Globulin Protein Materials with Calcium-Based Nanocrystals

Detection of Spiroplasma and Transmissible Spongiform Encephalopathies

Airborne Particulate Sampler

3. Publications (Standard General Output Measure)**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
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Plan			
Actual	18	139	157

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Target	Actual
2009	{No Data Entered}	1901203

Output #2

Output Measure

- Number of visits to LSU AgCenter Web site

Year	Target	Actual
2009	{No Data Entered}	1392977

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

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

Outcome #1**1. Outcome Measures**

Percentage of Louisiana's livestock producers who adopt best practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	70

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Poor economic conditions threatened sustainability of many Louisiana livestock operations in 2009. Louisiana's hot, humid climate creates challenges of heat-stress, high parasite populations, poor reproduction, disease pressures, impaired water quality and low forage quality. Assessing animal adaptability and designing effective production systems that manage the relationships among genetics, physiology, nutrition, and environment are key concerns. Improving the safety, quality, functionality and consumer acceptance of animal products is an ongoing concern.

What has been done

Research and extension programs addressed beef, dairy, equine, small ruminant and poultry species emphasizing animal health, genetics, nutrition, reproductive physiology and comparative production management systems. Enhancing the functionality, safety and acceptance of animal products was also examined. Information was disseminated via meetings with scientists and producers, field days, production manuals, fact sheets, peer-reviewed journal articles and web-based publications. Distance education technology and multi-state projects were implemented.

Results

Economical cattle, swine, and poultry diets were developed that minimized nitrogen and phosphorus entry into the environment. Strategic supplementation with local feed by-products, e.g., rice bran and corn gluten meal, and incorporation of clovers into annual and perennial grass pastures economically improved growth performance in grazing animals. Genetic analyses indicate that selection against internal parasitism and ill temperament in beef cattle has the potential to be effective. Pioneering technologies for improved reproductive efficiency in livestock were developed. Livestock disease research produced a novel plant-based oral vaccine for cattle and wildlife, a new method for early detection of metabolic syndrome in mares, and improved methods of mastitis prevention in dairy cows. A fourfold return on investment was realized from simultaneous control of both internal and external parasites in beef cattle. Livestock budgets were prepared and used on many operations to calculate production costs and net margins. Research and extension efforts such as a Master Cattle Producer and Master Horseman improved livestock sustainability while minimizing agricultural non-point pollution.

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

Outcome #2**1. Outcome Measures**

Percentage of Louisiana row crop producers who adopt best practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{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 instabilities promote producer concerns about sustainability of agricultural enterprises. Major crops include corn, cotton, rice, grain sorghum, soybeans, sugarcane, sweet potatoes, 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

Major breeding efforts focus on rice, sugarcane, wheat, sweet potatoes and are expanding into smooth cordgrass for wetlands restoration. Production addressed yield, cultural practices, and maximizing net economic return per acre. A broad array of research activities focused on crop pest management measures through development of disease resistant varieties, optimal pesticide use, and cultural field practices. Evaluation efforts for potential crops as bio-fuel feedstock are expanding. The Louisiana Master Farmer Program certifies producers in the adoption of best management practices and the Pesticide Certification Program certifies producers in the safe use of pesticides.

Results

Newly released varieties of major crops, such as rice, sugarcane and wheat, provide producers with crop production options to sustain or improve farm production net economic returns. Evaluation of the agronomic and economic potential of bio-fuel feedstock crops such as energy cane or sweet sorghum provide valuable information to producers considering expansion of production into new crops. Revised crop fertilization recommendations allow growers to produce economically optimal yields and to maximize returns per acre. Ongoing research and extension recommendations for crop weed, insect and disease control provide growers

with treatment options to control targeted pests while minimizing treatment costs. The Louisiana Master Farmer Program certified an additional 23 producers in the adoption of recommended practices bringing the total certified to 115. 377 private and 575 commercial applicators were certified through the Pesticide Certification Program and nearly 6000 private and commercial applicators were recertified.

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
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

Percentage of Louisiana's commercial fruit and vegetable producers who adopt best practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Needs were greatest to improve production efficiency and quality to enhance sustainability; reducing environmental impacts of pesticide use for both commercial producers and home gardeners; profitable marketing of products; current information on cultivars adaptive to production in Louisiana for fresh market and processing venues; maintaining integrity of seed programs and maximizing productivity to increase profitability; and identifying introduced pest problems.

What has been done

Evaluated fumigants and reduced risk pesticides to control diseases and insects; surveyed sweet potato farms to evaluate different generations of seed; published articles and educational publications on vegetable gardening,

food safety, fertilization and pest management; trained agents and growers for commercial and home vegetable and fruit production; worked in a regional cucurbit disease forecasting system; and detected Asian Citrus Psyllid and diapaes root weevil. Louisiana joined MarketMaker, a system that locates markets for agricultural products.

Results

Fruit growers received tools necessary to manage soilborne diseases in peach and information to make management decisions in blueberry. MarketMaker will facilitate an electronic infrastructure in LA to connect food producing farmers with new markets. Growers received improved information to better manage diseases of vegetables, such as downy mildew of cucurbits and sclerotial blight of sweet potatoes. Research and outreach in sweet potato contributed to a multi-million dollar sweet potato processing facility being constructed in north Louisiana and integration of new sweet potato cultivars resulted in improved yields and quality (increased sucrose content/flood tolerance). Sweet potato producers are contributing to their sustainability by participating in on-farm research that is improving production efficiency. Sweet potato producers are aware of the reality of generation decline and are focused on maintaining the viability of their seed programs. Rapid development of educational and management programs for Asian citrus psyllid and greening disease and diapaes root weevil greatly reduced spread of both pests.

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
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems

Outcome #4

1. Outcome Measures

Percentage of Louisiana aquaculture producers who adopt best practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Production aquaculture is seriously challenged with rising input costs and global competition. Increased efficiency and new products are needed. Many species in Louisiana's waters have culture potential but present specific problems that complicate commercialization. Crawfish farming involves over 130,000 acres, 1,200 farmers, and an estimated economic impact exceeding \$250 million, but extensive production methods present challenges in seasonality and inconsistent yields from year to year.

What has been done

Constraints on crawfish production and potential early or out-of-season harvests were evaluated. Nutritional values of diverse feedstuffs were tested to optimize growth and lower feed costs. Research is underway relating to development of marine baitfish culture. Culture of several native aquatic species is being developed. Cryopreservation, germplasm storage, induced spawning and specialized breeding techniques are being established for several aquatic species and refined for others.

Results

Lower feed costs and improved conversion rates will allow producers to compete more effectively against wild fisheries and foreign aquaculture. Coordination of spawning and reproduction in channel and blue catfish will streamline hybrid catfish production. Increasing reproductive efficiency will assist in commercializing Gulf killifish aquaculture. Baseline biological data and captive stocks will allow evaluation of culture methods for several native aquatic species. Research indicating crawfish populations may reflect some degree of density self-regulation could save producers millions of dollars per year in supplemental stocking costs. Managing crawfish production to take advantage of secondary and tertiary recruitment will increase yields significantly without reducing average size. Groundwork is being laid for creating new markets in germplasm, and enabling a shift from farm production to creation and marketing of genetic improvement that may one day be worth millions of dollars.

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
704	Nutrition and Hunger in the Population

Outcome #5

1. Outcome Measures

Percentage of Louisiana individuals below poverty level who adopt 3 or more management 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
2009	{No Data Entered}	41

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

18.2% of Louisiana's families with children and 23% of adults without children live in poverty. Poverty rates are higher among AA: 44.1% and children 18 and under: 31%. Louisiana ranks 13th among states for Food Stamp Program participation, 74% of eligibles. 31% White, 60 % AA, 3 % Hispanic, 7% Other. 36 % under the age of 11, 20 % 12-20y, 30 % 21-50y, 14 % 51+ years or older, 60% female; 40% Male. Only 25% Louisiana adults consume 5 servings of fruits and vegetables daily and 38.6% Louisiana adults participated in moderate to vigorous physical activity. 35% of deaths are caused by CVD.

What has been done

Individuals were enrolled in nutrition education programs that teach resource management and skills for budgeting food dollars. 11,841 individuals 18-59 years old and 5,005 individuals 60+ years or older received lessons on saving food dollars. 4,664 individuals received lessons on gardening, 9,604 individuals received lessons on the Dietary Guidelines for Americans, and 6,236 received lessons on Food Safety. In addition, a newsletter was mailed to 6,167 individuals on budgeting food dollars, 291 about gardening, and 5,932 on dietary guidelines.

Results

49% of participants more often compared prices when shopping, 52% less often ran out of food before the end of the month, 55% more often used a list for grocery shopping, 88% showed improvement in one or more management practices, 64% showed improvement in two or more management practices, 41% showed improvement in three or more management practices, and 16% showed improvement in all 4 food resource management practices. Focus Groups Discussions (FGD) were conducted to assess the perception of the Louisiana SNAP-ED in helping improve participants' diet and other lifestyle measures consistent with DGA and MyPyramid compared to eligible non-participants in Louisiana in 30 FSNEP adult participants and 26 FSNEP adult non-participants. Both participants and non-participants increased fruit and vegetable and whole grain or low/non-fat dairy intake by one serving per day. Participants balanced energy intake better with caloric expenditure by increasing physical activity than non-participants. The qualitative results reveal that FSNEP participants engage in healthier lifestyle practices than do FSNEP non-participants.

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

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

1. Evaluation Studies Planned

- After Only (post program)
- Comparisons between program participants (individuals, group, organizations) and non-participants
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

See Results section of each state-defined Outcome.

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	10%		10%	
122	Management and Control of Forest and Range Fires	5%		5%	
132	Weather and Climate	10%		10%	
133	Pollution Prevention and Mitigation	5%		10%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		10%	
205	Plant Management Systems	35%		5%	
212	Pathogens and Nematodes Affecting Plants	5%		5%	
402	Engineering Systems and Equipment	5%		5%	
403	Waste Disposal, Recycling, and Reuse	5%		25%	
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: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	24.0	0.0	10.6	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
493310	0	213650	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
493310	0	213650	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
2357482	0	3548329	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Activity includes research and extension outreach efforts on environment and natural resources, wetland plants, water quality, animal waste and sustainable housing.

2. Brief description of the target audience

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

V(E). Planned Program (Outputs)**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual	13663	34625	30760	4102

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

Year: 2009

Plan:

Actual: 3

Patents listed

M-Tyrosine as a Termite Deterrent

Self Cleaning Dairy Manure and Sand Separator

Structured Trap and Treatment Method for Subterranean Termite Control

3. Publications (Standard General Output Measure)**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
Plan			
Actual	9	19	28

V(F). State Defined Outputs**Output Target****Output #1****Output Measure**

- Number of Web page views.

Year	Target	Actual
2009	{No Data Entered}	101321

Output #2

Output Measure

- Number of Web page visits

Year	Target	Actual
2009	{No Data Entered}	306181

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Consumer adoption of recommended energy conservation measures and other practices for building, retrofitting and maintaining sustainable homes
2	Percentage of clientele who adopt recommended practices regarding livestock waste handling and utilization.
3	Adoption of best practices by certified Louisiana Master Farmers that lead to reduced non-point source pollution in Louisiana waterways.
4	Coordination of research and extension activities addressing environment and natural resource economics across the southeastern US including sea level rise in the Gulf of Mexico.
5	Determine the effects of various wetland plants in reducing wetland loss.

Outcome #1**1. Outcome Measures**

Consumer adoption of recommended energy conservation measures and other practices for building, retrofitting and maintaining sustainable homes

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	40

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Rising from the nation's and Louisiana's greatest natural disaster (hurricanes Katrina and Rita) was the opportunity to rebuild sustainable homes that are not only stronger and safer, but also energy efficient, "green" and healthy. There was a large market need and "teachable moment", massive resources to be invested in housing, and an unprecedented chance to raise the bar of housing sustainability.

What has been done

Gulf Region High Performance (GRHP) Homes program to accelerate market transformation via demonstration, outreach, technical assistance (TA) and training on best building practices.

LaHouse Resource Center educational attraction and training tool; TA to 9 builders across state to produce demo homes; 138 collaboration and 416 educational activities, including 10 in-service, 30 consumer seminars, 37 CEU seminars, 2 conferences, 60 mass media.

Regionalized Building Your High Performance Home book. 80 articles & Online Training Center (videos, CEU courses) on LaHouse web site.

Results

Involved 5,253 housing-related professionals, 8,898 consumers, 540 educators, and 242 volunteers. Key CEU seminars trained 1,365 building professionals. www.LouisianaHouse.org Web site had 101,321 page views by 60,492 viewers.

Consumer audiences reported, on average, adoption of 14 of 35 specific practices as a result of program, and 82% were willing to invest over 5% more for certified energy efficient home. Mean knowledge level rose from 1.5 to 3.2 on 5-point scale.

*Consumer audience is projected to save annually: 239,879 million Btu's of energy; \$4,425,411; 162,608 lbs. SO₂, 111,016 lbs. NO₂, and 88.5 million lbs. of CO₂ emissions.

Housing professional survey found average adoption of 7 building practices. Mean knowledge level rose from 3.2 to 4.1. Producers plan to build avg. of 12 GRHP homes/year.

*Technical seminar audience is projected to build 4,236 GRHP homes per year and annually save estimated: 110,979 million Btu's of energy; \$2,961,322; 54,642 lbs SO₂, 39,054 lbs. NO₂, and 29 million lbs. CO₂ emissions.

*Based on survey, technical audience numbers and energy modeling software analysis as indicator of potential program impact.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
402	Engineering Systems and Equipment
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #2**1. Outcome Measures**

Percentage of clientele who adopt recommended practices regarding livestock waste handling and utilization.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	70

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Animal waste handling and utilization presents a daunting task to producers. A FAO report suggests that livestock production was responsible for 18% of all anthropogenic greenhouse gas emissions. Some Louisiana rivers and lakes are reported on EPA's 303d list as impaired primarily by agricultural runoff. Nutrients and pathogens are among the leading causes of contamination. Yet, manure/litter management is often regarded as an expensive chore by food-animal production operators. Improved manure handling and treatment technologies need to be developed.

What has been done

Projects dealt with several issues related to animal waste and climate change. Research and educational efforts addressed optimum nutrient use by livestock and poultry production systems. Efforts were made to estimate the economic value of manure/litter nutrients to support cost-sharing programs. Waste treatment technologies were evaluated as alternatives to enhance effectiveness of anaerobic/facultative lagoons. Field studies evaluated proper manure/litter application rates and amendments for improving crop growth while reducing nutrient leaching. Eighteen producers were educated by extension faculty about composting ag byproducts through individual site visits and phone calls.

Results

Studies demonstrated that farm animals can be productive without exceeding NRC nutrient recommendations. It was estimated that P supplementation for dairy cows at recommended levels can reduce production costs by \$20 to \$50/head/year and minimize the risk of nearly 150 tons P runoff into Louisiana waters. Livestock and poultry producers improved waste management practices by using soil and manure/litter sample analyses to develop, implement, and utilize nutrient management plans. Properly recycling of nutrients is an essential factor in nutrient management plans, but recycling manure for nutrients alone is cost-prohibitive to many animal producers. Estimates showed that a 75% cost-sharing program for dairy farmers was needed to justify emptying manure storage lagoons. Consequently, the local NRCS cost-sharing program (EQIP) has been enhanced to include

lagoon clean-out or lagoon reclamation in Southeast Louisiana. A significant proportion of farmers took advantage of that program last year. Alternatively, AFOs were advised on new technologies to improve pollutant removal.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse

Outcome #3

1. Outcome Measures

Adoption of best practices by certified Louisiana Master Farmers that lead to reduced 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
2009	{No Data Entered}	100

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 and construction practices.

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

Results

Master Farmer Program is an intensive 8 hrs of classroom time for participants/visits to model farms and implementation of required BMPs in order to gain certification as a LA MF from the La. Dept. of Ag and Forestry. This year 23 farmers received that certification, and collectively since its inception 115 farmers have obtained it (quality criteria met to protect soil, water, animals, plants, air) with 2600 enrolled and making progress towards certification. This number of participants controls or owns over 1M acres in LA. Other applied research and educational programs on animal waste and homeowner issues resulted in the Tangipahoa River, an important economic and recreational waterway that runs through the middle one of our most populated areas and of the

states highest dairy production, 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 come off 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
133	Pollution Prevention and Mitigation
205	Plant Management Systems
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse

Outcome #4

1. Outcome Measures

Coordination of research and extension activities addressing environment and natural resource economics across the southeastern US including sea level rise in the Gulf of Mexico.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The health and well being of Louisiana's citizens depend on its resource-based economy. Louisiana's natural capital assets must be efficiently managed for both current and future generations. Effective resource management implies more than utilization. It also calls for a careful analysis of resource allocation decisions made today and their current and future positive and negative 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 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 and inland wetlands, fisheries, wildlife, land, and water resources.

Results

A new technique to estimate economic impacts of hurricanes on coastal infrastructure was developed that combines GIS and revenue data to develop rapid and spatially-precise damage estimates. This has proven pivotal to secure recovery funding following hurricanes. During the last 4 years, LSU AgCenter documented approximately \$1B in fisheries damages, providing the economic justification for more than \$250 million in recovery funding. In 2009, AgCenter faculty worked closely with Louisiana Department of Wildlife and Fisheries to coordinate distribution of funds through recovery loan and grant programs targeting more than 2000 commercial and recreational fishing business. In 2009, AgCenter resource economists identified and implemented several applied research initiatives related to coastal wetland resource management and restoration. Examples of research in this area include valuation studies, benefit-cost analyses, and project discounting assessments.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
132	Weather and Climate
133	Pollution Prevention and Mitigation

Outcome #5

1. Outcome Measures

Determine the effects of various wetland plants in reducing wetland loss.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Wetland deterioration is a significant environmental problem in the Northern Gulf of Mexico Basin, especially in 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 such extensive wetland loss affects our nation's security and deprives individual states and the nation of vitally important navigation, energy production, wildlife, and other wetland-related economic and environmental benefits.

What has been done

We developed a long-term, cohesive, multi-disciplinary, and multi-institutional program of coastal plant research and coastal land loss/restoration-focused community education and outreach (extension) initiatives that bring forward science-based solutions and innovative public policy options. The Coastal Plants Program's mission is to develop genetically improved plant varieties and applied restoration techniques to provide coastal managers with

improved technology. This program supports a strong science-based coastal research program and provides information exchange through an organized program of cooperative research and extension, thus supporting an expanded group of Louisiana wetland stakeholders.

Results

Through coastal community-based workshops targeting local governmental and community leaders, real-life storm surge models have been demonstrated with known parish landmarks that allow for short-term and long-term community risk management planning. Jointly with USDA, the Coastal Plants Program assisted in release of 6 cultivars for vegetative and wildlife restoration on barrier islands, saline, and brackish marshes. The Program developed protocols for mass propagation through tissue culture regeneration. Important coastal species including smooth cordgrass, California bulwhips, and sea oats were characterized for genetic diversity and traits that enhance coastal reclamation value. A selection of superior plant populations, breeding lines, and superior seed-producing varieties will be released for commercial production. We are the only group to-date to successfully remediate damaged marsh sites using aerial seed application. We are conducting long-term ecological studies to assess the hydrologic-soil-plant dynamics of vegetative restoration following dredge sediments for wetland creation. The results will add to the restoration knowledge base, advance restoration technology, and provide coastal wetland project planners, designers, and builders with additional restoration and management strategies.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
112	Watershed Protection and Management
122	Management and Control of Forest and Range Fires
132	Weather and Climate
133	Pollution Prevention and Mitigation
201	Plant Genome, Genetics, and Genetic Mechanisms
205	Plant Management Systems
402	Engineering Systems and Equipment

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

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

1. Evaluation Studies Planned

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

- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals, group, organizations) and non-participants
- Comparison between locales where the program operates and sites without program intervention

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	25%		5%	
511	New and Improved Non-Food Products and Processes	75%		95%	
	Total	100%		100%	

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	1.0	0.0	7.2	0.0

Actual	1.0	0.0	7.2	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
20555	0	56313	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
20555	0	56313	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
98228	0	3447489	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

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

2. Brief description of the target audience

Producers, consumers, college students, extension agents, scientists

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual	258	400	0	0

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

Year: 2009

Plan:

Actual: 5

Patents listed

Chemical Oxidation for Cellulose Separation

Power and Hydrogen Generation System

Thermochemical Treatment of Lignocellulosics for the Production of Ethanol

Microwave Oil Extraction from Seeds or Other Biomass

Biobased, Biodegradable and Photocrosslinking Thermoset Copolymers made from Glycerol

3. Publications (Standard General Output Measure)**Number of Peer Reviewed Publications**

2009	Extension	Research	Total
Plan			
Actual	7	1	8

V(F). State Defined Outputs**Output Target****Output #1****Output Measure**

- Number of contacts made through group meetings.

Year	Target	Actual
2009	{No Data Entered}	137

Output #2**Output Measure**

- Number of contacts made through home, farm and office visits and phone calls.

Year	Target	Actual
2009	{No Data Entered}	100

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

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

Outcome #1**1. Outcome Measures**

Identification of Louisiana 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
2009	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Biofuels derived from plant biomass can contribute substantially to improving energy independence of the United States. Louisiana has a long growing season and high vegetation diversity that can foster biomass production to support a biofuel industry. Maximizing biomass production potential for the state necessitates identification of crops and cropping systems capable of producing high biomass in an economically viable and environmentally sustainable manner.

What has been done

Studies were established to explore the most productive genetic sources, fertilization regimes, and/or protocols for planting and harvesting energy canes, sweet sorghum, switchgrass, miscanthus, loblolly pine, cottonwood, eucalyptus, and microalgae. These studies evaluate crops best suited to growing conditions of each region of the state; most are paired with studies of water quality and soil nutrition to explore cropping system sustainability. AgCenter energy canes were provided to industry to resolve technical barriers to cellulosic ethanol commercialization.

Results

Fertilizer rate studies have confirmed that sweet sorghum fermentable sugar yield can be optimized with moderate amounts of nitrogen fertilizer. Sweet sorghum cultivar evaluations identified high-yielding cultivars for all regions of the state. Ethanol was produced from bagasse and leaves of sorghum by enzymatic saccharification, which increased overall ethanol production of sorghum by 99% compared to the conventional practice of producing ethanol from juice alone. It has been found that switchgrass can be successfully established in alleys between loblolly pine trees, with moderate shading from trees aiding switchgrass establishment and reducing herbicide requirements. Establishing switchgrass within alleys between loblolly pine also improved labile soil carbon concentrations, suggesting that soil quality was improved under the pine by switchgrass. These results provide evidence that Louisiana has greater flexibility and production capacity for biofuels through high ethanol-yielding sweet sorghum production practices suitable in each region of the state and growing switchgrass in the understory of the state's abundant pine forests.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

Outcome #2**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
2009	{No Data Entered}	258

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Agriculture underlies the country's push to sustainable energy, yet agricultural feedstocks are available only in a fixed window in time. Flexibility in operation of a biorefinery requires continuous feedstock delivery. The technical hurdles that block biofuel production in Louisiana range from finding multiple feedstocks for year round delivery, developing the tools for producers and processors to determine value of these crops, developing processing technologies for biofuels and finding supplemental high value products to improve the economics.

What has been done

The Audubon Sugar Institute conducted laboratory and pilot scale research on pretreatment options for bagasse, sweet sorghum, Miscanthus, and energy cane, and rapid analytical methods for lignocellulose. The focus is on the complete system required for biofuel production (yields, complete conversion, valuation). Several by-products were developed; they are a functional food additive, a biodegradable plastic and a novel anti-fungal compound. The W. A. Calligari Environmental Center has actively developed and conducted numerous educational workshops that teach people how to convert waste cooking oil into biodiesel (alternative fuel). Numerous educational programs on biofuels target interested producers.

Results

The AgCenters Biofuel program centers on the Audubon Sugar Institute, a multi-disciplinary unit organized for team research and filling the gap between University and Industry research. Biofuels research is multi-faceted, anticipating the problems that arise from incorporating new technologies into existing industries. The working model is the conversion of raw sugar factories into bio-refineries. The initial charge was ethanol production from utilization of excess bagasse, sweet sorghum and energy cane, extending the processing season. Lignocellulosic pretreatment technologies based lime or ammonia pre-treatment were investigated, a rubric for rapid analysis for lignocellulose using NIR was developed, crop fractionation and fermentation technology for sweet sorghum and energy cane was defined and two new by-products from these processes have been developed. As part of the University community, Audubon has ready access to other units of the Ag Center and of LSU which allows incorporation of all facets of biofuel development in the efforts. Over 250 individuals including scientists, college students and producers have attended the waste cooking oil biodiesel production workshops effectively reducing the waste stream entering landfills or requiring waste processing treatment. Additionally, biodiesel can be used as a sustainable alternative energy source for small businesses and on farms.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment
511	New and Improved Non-Food Products and Processes

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

1. Evaluation Studies Planned

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

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
502	New and Improved Food Products	0%		85%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		15%	
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: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	26.0	0.0	1.4	0.0

Actual	26.0	0.0	1.4	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
82218	0	14499	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
82218	0	14499	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
392914	0	424286	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Numerous nutrition education programs targeting youth were conducted. The Smart Bodies Program (a nutrition and physical activity program) was implemented in Louisiana through the 4-H program and with kindergarten through 5th grade students.

2. Brief description of the target audience

Louisiana youth grades K-5; 4-H'ers; elementary school teachers; adult and teen volunteers

V(E). Planned Program (Outputs)**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual	61574	14559	266887	97291

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

Year: 2009

Plan:

Actual: 0

Patents listed**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
Plan			
Actual	3	3	6

V(F). State Defined Outputs**Output Target****Output #1****Output Measure**

- Number of Web page views.

Year	Target	Actual
2009	{No Data Entered}	17895

Output #2**Output Measure**

- Number of visits to LSU AgCenter Web site

Year	Target	Actual
2009	{No Data Entered}	13428

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Louisiana youth and parents learn about healthy lifestyle habits which will lead to reduced chronic disease and health-related issues in later life.

Outcome #1**1. Outcome Measures**

Louisiana youth and parents learn about healthy lifestyle habits which will lead to reduced chronic disease and health-related issues in later life.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	42182

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Obesity is a growing health problem carrying significant costs. Louisiana youth are among the unhealthiest in the nation; 36% of 10-17 year olds are overweight and 53% don't exercise regularly. Childhood obesity rates are a concern as children who are overweight are 70% likely to be overweight as an adult which increases risk for chronic diseases such as cardiovascular disease, type 2 diabetes, some cancers, sleep apnea, hypertension, and osteoarthritis (CDC).

What has been done

4-H Healthy living promotes the physical, emotional, and mental well-being of over 42,182 Louisiana youth. Healthy Living programming includes: Smart Bodies, Health Rocks, Food and Fitness Board, Food and Fitness Camp. Smart Bodies (SB), a nutrition and physical activity program, reached K-5th youth in 32 parishes. Since March 2005, more than 400 elementary schools have implemented the SB program reaching nearly 175,000 children. Health Rocks! reached 3,932 youth and adults.

Results

SB participation produced statistically significant increase in nutrition knowledge. Data suggests that participation in Smart Bodies significantly increases: knowledge about the health benefits of eating fruits and vegetables; knowledge about the effects and benefits of physical activity; overall physical activity levels; awareness of children's health status and equips students with the knowledge and intention necessary for them to adopt positive lifestyle behaviors.

Ninety-five percent (95%) of participants in Health Rocks! session indicated that they have a greater understanding of media's influence on their diet. Additionally, participants indicated that increased their knowledge of the harmful health impacts of using tobacco, drugs, and alcohol.

In a 4-H Camp Nutrition evaluation, youth scored a mean of 87 for knowledge of portion control. Ninety-four percent identified playing on the computer was inadequate exercising while 93% knew 60 minutes of exercise is needed daily.

4. Associated Knowledge Areas

KA Code	Knowledge Area
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
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

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

1. Evaluation Studies Planned

- After Only (post program)
- Time series (multiple points before and after program)
- Comparisons between program participants (individuals, group, organizations) and non-participants

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	85%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	10%		35%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	5%		65%	
	Total	100%		100%	

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	3.0	0.0	2.5	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
61664	0	50383	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
61664	0	50383	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
294685	0	1113377	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Activity involved appropriate research experiments, result demonstrations, workshops and classes, certification programs, and effective use of media 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

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual	25169	935	6767	0

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

Patent Applications Submitted

Year: 2009
 Plan:
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan			
Actual	2	7	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of nationally-accredited HACCP workshops conducted

Year	Target	Actual
2009	{No Data Entered}	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase awareness, knowledge and/or skills regarding safe food handling and preparation by both consumers and commercial entities.

Outcome #1**1. Outcome Measures**

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	30000

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Foodborne illness affects millions of Americans each year. Research shows that proper food handling and preparation can prevent most foodborne illnesses. Commercial processors of seafood, meat, poultry, and juice are required to be certified in principles of HACCP (Hazard Analysis and Critical Control Point). Companies, such as Wal-Mart, are requiring HACCP. Small companies and start-ups need help in meeting these requirements. Oyster companies that use a post-harvest treatment are required by the FDA to validate if their treatments adequately reduced Vibrio's in oysters.

What has been done

Two rapid methods were developed to enumerate Vibrio species in oysters - a novel quantitative molecular technique to detect *V. vulnificus* and a immune-magnetic bead technique for extraction of *V. vulnificus* and *V. parahaemolyticus* followed by real-time PCR for quantification. Food safety information was provided to Louisiana citizens via many channels. Media efforts targeted food safety outbreaks and issues, such as H1N1 and Salmonella in peanut butter. Nationally-accredited training in Sanitation Control Protocol, Seafood HACCP, and Meat and Poultry HACCP was provided.

Results

Louisiana consumers (30,000) learned recommended food safety practices. An estimated 100,000 Louisiana consumers gained food safety knowledge through mass media channels. Young children (5,000) learned about germs and the importance of hand washing through participation in "Hooray for Handwashing" at AgMagic. Restaurateurs, food vendors and food service providers attending the Food Service and Hospitality Exposition received food safety training and fact sheets to provide training to their employees. Participants were asked to evaluate both courses. Suggestions will be used to strengthen future course offerings. It is common for participants to implement their model into their existing facilities. The two newly developed rapid techniques could be used by regulatory agencies and the Seafood industry for detection and enumeration of pathogenic Vibrio's in oysters. Fifty-eight processors received certification in HACCP. Entrepreneurs were helped in establishing their businesses. Processors were assisted in correcting regulatory deficiencies and met regulatory requirements to continue operation. Processors added new markets.

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

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

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

1. Evaluation Studies Planned

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

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
204	Plant Product Quality and Utility (Preharvest)	10%		5%	
205	Plant Management Systems	80%		85%	
213	Weeds Affecting Plants	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	34.0	0.0	20.0	0.0
Actual	16.0	0.0	3.8	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
328874	0	53763	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
328874	0	53763	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1571655	0	2130745	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activity included appropriate research experiments, result demonstrations, individual consults, group meetings, mass media (radio, television and newspaper), publication development; extensive use of Web technology and use of social media.

2. Brief description of the target audience

Horticulture professionals, home gardeners, nursery growers, Master Gardeners, and related agribusiness clientele.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	100000	75000	0	0
Actual	125697	151499	10827	744

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

Patent Applications Submitted

Year: 2009
 Plan: 1
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	15	
Actual	9	5	14

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Clientele reached

Year	Target	Actual
2009	25000	25000

Output #2

Output Measure

- Number of Web page views

Year	Target	Actual
2009	{No Data Entered}	800881

Output #3

Output Measure

- Number of visits to LSU AgCenter Web site

Year	Target	Actual
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2009

{No Data Entered}

612374

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
2009	70	70

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Horticulture professionals seek to improve production efficiency, enhance marketing potential and reduce environmental impact associated with pesticide and fertilizer use. Home gardeners require information in the areas of species and cultivar selection, weed management and cultural practice improvements. Producers of bedding plants, landscapers and consumers encounter disposal issues with petroleum-based plastic containers once the plants are removed at transplanting. Container media availability and functionality were problems for nursery growers.

What has been done

Education effort at Louisiana House continues to address sustainable landscape/home gardening issues. Get It Growing mass media efforts addressed home horticulture topics. Low maintenance hybrid tea variety research started. Bedding plants were grown in plastic and various types of biodegradable containers in the greenhouse and then transplanted in the landscape to determine if these biodegradable containers are sustainable products. Nursery media research expanded. Initial efforts were started on a Louisiana Super Plants ornamental plant promotion and marketing program. 350 adults received 40-50 hours of consumer horticulture training through the Louisiana Master Gardener (LMG) program which is designed to increase participant knowledge as well as adoption rates of best management practices.

Results

The Get It growing effort produced 260 radio stories, 52 print news articles and 52 television stories. More than 15,700 persons were provided information at 2009 spring garden shows. Over 240 green industry businesses participated in 2009 spring garden shows. Ornamental plant recommendations were made via landscape plant evaluation studies. Camelot foxglove, Amazon dianthus and ShiShi Gashira camellia were named Louisiana Super Plants for 2010. Disease diagnostics for home gardeners expanded. Plant growth differences were found when using plastic and various biodegradable containers, however, all biodegradable containers tested would serve as suitable replacements for plastic containers in the greenhouse and landscape. Addition of calcium and magnesium sources resulted in significant growth improvements for azalea and gardenia. Media composed of rice hull ash, pine bark, peat and perlite in various combinations produced desirable poinsettias. Good Griffith Buck roses for sustainable landscapes are April Moon, Dorcas, Music Maker, Piccolo Pete, Prairie Squire, Bright Melody, Kathy's Find, Aunt Honey, Countryman and Do-Si-Do. In 2009, 1551 active LMG volunteers logged in over 50,000 volunteer hours (FTE equivalent of 30) to support consumer horticulture outreach having a one million dollar economic impact.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

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
724	Healthy Lifestyle	10%		20%	
801	Individual and Family Resource Management	25%		20%	
802	Human Development and Family Well-Being	65%		60%	
	Total	100%		100%	

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	28.0	0.0	1.0	0.0
Actual	15.0	0.0	1.5	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
308319	0	31310	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
308319	0	31310	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1473427	0	119038	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Extension outreach using group and individual methods and mass media as appropriate.

2. Brief description of the target audience

General public including those with low income, the elderly, youth, young families, early childhood educators, parents/guardians, farm families, employees, employers, business owners and 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

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	190000	0	0	0
Actual	38065	25906	6510	1264

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

Patent Applications Submitted

Year: 2009
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	1	12	13

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Clientele reached

Year	Target	Actual
2009	10000	10000

Output #2

Output Measure

- Number of Web page views

Year	Target	Actual
2009	{No Data Entered}	149088

Output #3

Output Measure

- Number of visits to LSU AgCenter Web site

Year	Target	Actual
2009	{No Data Entered}	106903

Output #4

Output Measure

- Number of Child Care Provider classes conducted

Year	Target	Actual
2009	{No Data Entered}	491

Output #5

Output Measure

- Number of child care provider training certificates issued

Year	Target	Actual
2009	{No Data Entered}	10611

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Parents implement positive parenting practices
2	Percentage of early childhood educators who learn the importance of and implement developmentally appropriate experiences.
3	Percentage of participants who learn and/or use skills to improve 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
2009	50	58

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Research indicates that parenting styles/practices are related to children's success in schools and delinquent behavior outcomes in children regardless of SES. The increasing number of incarcerations has left more children to be parented by grandparents. Best practices in parenting has changed since these grandparents were parents. Anger management, communications, and stress management are major issues for parents and grandparents.

What has been done

Anger management, communications, and stress management were critical lessons addressed with parents in some of the widest variety of audiences the LSU AgCenter has experienced according to audience types identified in parish impact reports. Agents collaborated with state agencies and other organizations to work with parents using research and evidence-based parenting curricula. The curricula used were targeted for the various populations and focused on their needs.

Results

Seventy-five (25%) of the teens and adults have learned how to control their anger and 20 (10%) have learned to walk away from situations that have caused them jail time, probation and community service. Results of the pre-post-test indicate that the participants increased their awareness and knowledge of positive parenting practices by an average of 58%.

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 #2**1. Outcome Measures**

Percentage of early childhood educators who learn the importance of and implement developmentally appropriate experiences.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	30

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 involved in or in need of child care. Also, Louisiana's child care regulations fall short in serving as models for prevention of childhood obesity.

What has been done

Classes and training for early childhood staff to obtain their Child Development Associate Credential or clock hour training hours 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. In Caddo parish, "Kids in the Kitchen" program and curriculum was developed for children ages 5 to 12 through classes offered on healthy food choices and food preparation.

Results

Four hundred ninety-one (491) educational classes were conducted by 20 Family and Consumer Sciences agents for child care providers. Ten thousand six hundred eleven (10,611) training certificates were awarded to child care providers who participated. Program evaluation of a selected portion of the training program indicated child care providers showed statistically significant knowledge gain after attending four training sessions in the Right from Birth training series. It was found that child care providers are using the information they learned, implementing more recommended care practices that are beneficial to children.

Twenty-seven other nutrition and fitness lesson plans were developed to promote healthful eating for children. As this is still considered an emerging project for child care providers, there is limited data on outputs and outcomes. Parents reported the students in the "Kids in the Kitchen" classes were preparing and eating more healthy foods at home.

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**

Percentage of participants who learn and/or use skills to improve 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
2009	{No Data Entered}	50

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Louisiana has suffered from a number of budget cuts troubling to many families. A family's ability to recover from crisis is influenced by additional life stressors and by family perceptions. A family's goals, values, problem solving skills, and support networks impact its adaptation to long-term stress and crisis. Divorces, drug and alcohol abuse and other behaviors detrimental to keeping families intact typically increase during tough economic times.

What has been done

A series of articles on strengthening families was developed through interdisciplinary connections with nutrition and resource management specialists and provided to the news media. Specialists and field faculty have been collaborating with Department of Corrections, judges dealing with family court cases and Grandparents Raising Grandchildren coalitions to teach incarcerated parents, probationers and parolees, and grandparents effective parenting skills/strategies for strengthening families.

Results

Forty-five (10%) of the couples in St. John Parish learned how to better communicate with each other and 5 (2%) remarried or decided to reconcile. Ninety-eight percent of the parents in Bossier Parish agreed as a result of the co-parenting class they would try to follow the recommended practices to not put their children in the middle of their issues with their ex-spouses. Fifty-six percent of grandparents (31) in an Orleans/Jefferson grandparenting audience reported that their grandchildren have adapted responsible behavior such as completing assigned chores and getting homework done in a timely manner making life easier for the family.

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

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- Case Study
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

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
806	Youth Development	100%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	100.0	0.0	0.0	0.0
Actual	102.0	0.0	0.1	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
2096569	0	765	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
2096569	0	765	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
10019300	0	13445	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Age appropriate educational experiences were provided for Louisiana youth in the following three focus areas: Citizenship, Healthy Living and Science and Technology. Note: The activity in the Healthy Living Focus Area is reported under the Childhood Obesity Initiative. Appropriate adult education principles were used to conduct educational experiences for volunteers.

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**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	115000	125000	700000	400000
Actual	140912	44774	1248702	205178

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

Patent Applications Submitted

Year: 2009
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	4	1	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Youth reached

Year	Target	Actual
2009	200000	200000

Output #2

Output Measure

- Number of Web page views

Year	Target	Actual
2009	{No Data Entered}	925013

Output #3

Output Measure

- Number of visits to LSU AgCenter Web site

Year	Target	Actual
2009	{No Data Entered}	6690390

Output #4

Output Measure

- Number of youth engaged in service learning projects.

Year	Target	Actual
2009	{No Data Entered}	3000

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 that will lead them to be contributing citizens within their communities (citizenship).
3	Youth gain scientific and technology literacy as well as become aware of career choice opportunities 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 that will lead them to be contributing citizens within their communities (citizenship).

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	3000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Volunteering among youth has reached the highest levels in 50 years. While these youth are trying to make a difference through service, there remains an unclear yet blatant sense among most that what is done matters little to the civic life and health of communities, states, or country. Americans express despair over the country's drift away from core democratic and civic values to emphasize "winning at all costs," greed and selfishness that are eclipsing family, community, and responsibility.

What has been done

Over 78,000 4-H members have been reached through ongoing, intentional citizenship programming including character development, community service, civic engagement, governmental studies, patriotism efforts and literacy. Service-learning projects reached over 22,000 people. Over 8,000 volunteers supported 4-H programs with over 1500 completing chaperone training. The OMK program reaches 2628 military youth with 11 camps, 21 trainings and 200 Hero Packets.

Results

Over 3000 4-H'ers from 54 parishes participated in 70 service projects helping 22,002 people, raising \$78,975.24 and logging in 9009 hours worth \$182,432.25. Survey results indicated 94% were made more aware of their responsibility to help and 91% have a better understanding of the community problems.

4. Associated Knowledge Areas

KA Code Knowledge Area

806 Youth Development

Outcome #3**1. Outcome Measures**

Youth gain scientific and technology literacy as well as become aware of career choice opportunities through hands-on scientific learning and discovery.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	130824

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). However, youth in Louisiana are ill-prepared to enter careers in SET. In Louisiana, 4th graders had below basic test scores in: 28%, Basic Math; 43%, Science; and 48%, Reading. Eighth graders had below basic test scores in: 38%, Basic Math; 53%, Science and 36%, Reading. Less than half (44%) of youth had computers in their home.

What has been done

Science, Engineering and Technology programs reached 130,824 4-H members this year through special interest workshops, school enrichment, camps and clubs. Approximately 5,000 4th and 5th graders are reached through summer camp programs. Since inception, Youth Wetlands Week (YWW) reached 100,000 youth and 2000 teachers. The Robotics program reached 112 youth in its first year. The 4-H Shooting Sports Program had over 1000 participants and 200 volunteers were trained in various disciplines.

Results

At the LOST Camp, 76% of youth indicated that they were curious about the world in which they live; 79% learned about robotics programming and logic sequences; 75% learned about polymers; 78% learned the basics of editing video; 83% correctly identified the percentage of alligator hatchlings that must be returned to the wild; 72% learned yielding enough forensic details for a court of law.

During the 2007-2008 program year, 11,822 pre and post tests analyzed with general science knowledge increased on average of 28% across grades 4-12. Teacher survey results showed that the overall response to the program was an average 92% rating.

Marsh Maneuvers combined pre and post test results showed an overall improvement in test scores at the conclusion of camp, with the average score increasing 22.4% across grades 7-12.

Wild Woods Wandering pre test average was 40% and the post test average was 57%, indicating a 17% increase in scores.

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

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

1. Evaluation Studies Planned

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

Evaluation Results

Key Items of Evaluation

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
123	Management and Sustainability of Forest Resources	75%		35%	
135	Aquatic and Terrestrial Wildlife	5%		40%	
136	Conservation of Biological Diversity	10%		15%	
402	Engineering Systems and Equipment	5%		5%	
604	Marketing and Distribution Practices	5%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	7.0	0.0
Actual	7.0	0.0	9.9	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
143882	0	59782	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
143882	0	59782	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
687599	0	4474118	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Activity included extension outreach efforts including workshops, result demonstrations and individual consultations, as appropriate and research experiments.

2. Brief description of the target audience

Forest landowners, managers and loggers; arborists

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	25000	25000	0	0
Actual	16638	65597	34558	472

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

Patent Applications Submitted

Year: 2009

Plan: 1

Actual: 6

Patents listed

Composites Made of Used Plastic Containers with Residual Oil and Cellulosic Fibers

Diterpene Glycosides as Natural Solubilizers

Composition of Synergistic Natural Compounds and Methods of Treatment Using the Same Process for Rapid Microwave-Assisted Detoxification of CCA-Treated Wood

Terpene Glycosides and Their Combinations as Solubilizer Agents

Thermoplastic Cellulosic Fiber Blends as Lost Circulation Materials

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	40	
Actual	1	22	23

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Clientele reached

Year	Target	Actual
2009	10000	10000

Output #2

Output Measure

- Number of Web page views

Year	Target	Actual
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2009	{No Data Entered}	86406
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Output #3

Output Measure

- Number of Web page visits

Year	Target	Actual
2009	{No Data Entered}	65864

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
2009	65	65

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Management effects on hydrology and water quality and their reciprocal effects on forests, degradation of coastal forests and restoration tools and incentives, and long-term forest term productivity remain concerns. Mills have closed from depressed housing markets. Forest products saw needs in improving processing production and efficiency, recycling, marketing and worker safety. Both managers and loggers asked for continuing education.

What has been done

Studies measured the response of wetland forests to hydrology changes and carbon storage of forest sites. Wood was purged of heavy metals from decommissioned preservative-treated wood, and new wood products developed from the material. Worksite safety among loggers and arborists was monitored and assessed. Research and publication continued as the basis for sound management of forest resources. Certification training for loggers and forest landowners through the Master Logger Program and the Master Tree Farmer Program satisfied continuing education needs of clients.

Results

Data on harvesting effects on water quality has agencies and companies closely watching sediment runoff. Louisiana's coastal forests are benefitting from regeneration data and identifying the hydrological effects on these forests. Forest management statewide benefited from data on management effects on hydrology and water quality, long-term growth, and reestablishment of indigenous vegetation in forests. Sawmills have expressed interest in log scanning to improve conversion efficiency. A US patent is pending for new methods to remove heavy metals in decommissioned preservative-treated wood. New products in the composites arena were developed with one resulting patent and commercialization. Wood energy research has identified preliminary opportunities for Louisiana forest landowners. Extension activities have also influenced clientele. Many reported that they have adopted new practices after attending our workshops. About 370 people attended various workshops during the past year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
135	Aquatic and Terrestrial Wildlife

136	Conservation of Biological Diversity
402	Engineering Systems and Equipment
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

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

1. Evaluation Studies Planned

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

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
211	Insects, Mites, and Other Arthropods Affecting Plants	0%		10%	
602	Business Management, Finance, and Taxation	10%		10%	
604	Marketing and Distribution Practices	5%		5%	
609	Economic Theory and Methods	0%		5%	
610	Domestic Policy Analysis	5%		15%	
721	Insects and Other Pests Affecting Humans	0%		35%	
722	Zoonotic Diseases and Parasites Affecting Humans	0%		5%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	40%		5%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	0%		5%	
903	Communication, Education, and Information Delivery	40%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	12.0	0.0	9.0	0.0
Actual	13.0	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 267210	1890 Extension 0	Hatch 210013	Evans-Allen 0
1862 Matching 267210	1890 Matching 0	1862 Matching 210013	1890 Matching 0
1862 All Other 1276970	1890 All Other 0	1862 All Other 1282724	1890 All Other 0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Educational programs were conducted specifically in entrepreneurship, leadership, agricultural enterprises development (agritourism), e-commerce, rural broadband connectivity and rural tourism using appropriate educational experiences including group meetings, mass media, and individual consultations.

2. Brief description of the target audience

Entrepreneurs and community leaders in rural Louisiana, government officials and agencies; general public; and producers.

V(E). Planned Program (Outputs)**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	33000	40000	0	0
Actual	123875	54787	232525	126363

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

Year: 2009

Plan: 0

Actual: 0

Patents listed**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
Plan	0	5	
Actual	1	26	27

V(F). State Defined Outputs**Output Target**

Output #1

Output Measure

- Clientele reached

Year	Target	Actual
2009	2500	2500

Output #2

Output Measure

- Number of Web page views

Year	Target	Actual
2009	{No Data Entered}	131569

Output #3

Output Measure

- Number of Web page visits

Year	Target	Actual
2009	{No Data Entered}	91130

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
2009	{No Data Entered}	136

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. These conditions also make it difficult for our coastal rural parishes to be resilient in the face of natural disasters.

What has been done

The LSU AgCenter's Delta Rural Development Center faculty developed programs to address persistent poverty conditions in rural Louisiana. The Center provided educational programs in entrepreneurship, leadership, agricultural enterprise development and rural tourism.

Results

Louisiana Economic Development, Entergy Corporation and LSU AgCenter collaborated to develop new Extension programs in e-business and leadership (Lead Louisiana and Lead Louisiana 2). E-business training was provided to 100 entrepreneurs and leadership training to 36 community leaders. Faculty led the development of a state legislated regional development effort called the Louisiana Delta Initiative (LDI) and a 12-parish regional economic development plan. LDI work included mapping broadband service in rural areas of West and East Carroll Parishes, Connect Carroll, and provided technical assistance to 12 parish region to spur e-business growth in rural areas. Faculty led regional collaborations to increase access to higher education for 33 students through the Rural Community College Initiative. Faculty also led development of the Miss-Lou Rural Tourism Summit and Louisiana Delta 65 regional development organizations. A new participatory research program identifying resources to finance debris removal/emergency operations for future tropical disasters occurred in Tangipahoa Parish and will be applied to future parishes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices
609	Economic Theory and Methods
610	Domestic Policy Analysis
721	Insects and Other Pests Affecting Humans
722	Zoonotic Diseases and Parasites Affecting Humans
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures
903	Communication, Education, and Information Delivery

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

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Case Study
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Evaluation Results

See Impact Report

Key Items of Evaluation

V(A). Planned Program (Summary)**Program # 11****1. Name of the Planned Program**

Human Nutrition and Food

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%		50%	
502	New and Improved Food Products	0%		20%	
503	Quality Maintenance in Storing and Marketing Food Products	5%		5%	
702	Requirements and Function of Nutrients and Other Food Components	5%		20%	
703	Nutrition Education and Behavior	90%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	67.0	0.0	9.0	0.0
Actual	54.0	0.0	13.7	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
41109	0	175861	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
41109	0	175861	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1619534	0	3102873	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Activity included appropriate research; educational outreach and individual consultations.

2. Brief description of the target audience

General public

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	40000	400000	0	0
Actual	122875	29119	20000	0

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

Patent Applications Submitted

Year: 2009

Plan: 1

Actual: 4

Patents listed

Methods for Incorporating Fenugreek into Food Products

Process for Sugar Production from Lignocellulosic Biomass Using Alkali Pretreatment

Device for Turbulence Reduction

Antifungal and Anti-Cariogenic Cellobio-Oligosaccharides Produced by Dextransucrase

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	20	
Actual	11	20	31

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Clientele reached

Year	Target	Actual
2009	10000	10000

Output #2

Output Measure

- Number of Web page views

Year	Target	Actual
2009	{No Data Entered}	366599

Output #3

Output Measure

- Number of Web page visits

Year	Target	Actual
2009	{No Data Entered}	268674

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

Outcome #1**1. Outcome Measures**

Participants are knowledgeable about and follow healthy weight management practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	200	1455

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

In the U.S. in 2009, Louisiana ranked 47th in health, 4th in obesity, 1st in diabetes-related deaths, 7th in diabetes, and 8th in high blood pressure. Nearly 2/3 of adults are obese/overweight, 10.6% of residents were diagnosed with diabetes, and 35.6% of 10 to 17-year-olds are overweight. In youth, type 2 diabetes is increasing. In the elderly, macular degeneration is the leading cause of blindness. Offering programs in nutrition and health to improve nutritional status and improve health is a high priority in Louisiana.

What has been done

Smart Portions Program was presented to 1500 statewide. The DEAR Diabetes program was conducted in 34 parishes for > 5,400 people. Information based on current recommendations for infant feeding and breastfeeding was updated. Berry by-products that decrease inflammation were identified. A starch with health benefits (resistant starch) was shown to reduce body fat in a rodent model. Omega-3 fats (fish or fish oils) are being investigated as an approach to decreasing macular degeneration. Dairy products were made more functional.

Results

Healthy weights were achieved/maintained by 97% of clients after a Smart Portions program. Adults receiving diabetes workshops adopted and followed healthy lifestyle practices 80% of the time and youth had increased awareness of diabetes/symptoms. The Smart Choices program, delivered to 56,000, increased consumption of fruits, vegetables, whole grains; decreased consumption of foods high in saturated fats; increased physical activity. Resistant starch may decrease food intake or increase energy expenditure. Resistant starch of LA crops may be effective for prevention and/or treatment of obesity; by-products with resistant starch could be converted into healthy food alternatives, providing a valuable new business asset. The amount of eye pigment related to risk for macular degeneration and loss of sight is positively correlated to consumption of fish high in omega-3 fatty acids; this finding underscores the importance of seafood in a healthy diet. Demand for LA seafood products will grow in response to demonstrated health benefits. The addition of probiotics improved heart-healthy aspects of yogurt without affecting consumer acceptability.

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Comparisons between program participants (individuals, group, organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)**Program # 12****1. Name of the Planned Program**

Consumer Economics

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	50%		100%	
801	Individual and Family Resource Management	50%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Actual	12.0	0.0	0.4	0.0

Actual	12.0	0.0	0.4	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
246655	0	8601	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
246655	0	8601	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1178741	0	65954	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Although our current internal reporting system does not allow us to capture effort to this degree, extension effort was expended in these additional KAs: 607. Educational outreach efforts in home-buyer education, financial planning, and saving and investing utilizing appropriate educational methods including group meetings, mass media, Web-based technology and individual consultations. Development of the Foreclosure Prevention Task Force

2. Brief description of the target audience

First time homebuyers; high school teachers; high school students; prisoners/probationers/parolees; extension faculty; financial counselors

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual	31168	12559	20289	3056

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

Patent Applications Submitted

Year: 2009

Plan:

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan			
Actual	67	0	67

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Target	Actual
2009	{No Data Entered}	68941

Output #2

Output Measure

- Number of Web page visits

Year	Target	Actual
2009	{No Data Entered}	49941

Output #3

Output Measure

- Number of lessons prepared for comprehensive curriculum packages

Year	Target	Actual
------	--------	--------

2009

{No Data Entered}

9

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1**1. Outcome Measures**

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
2009	{No Data Entered}	80

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Key issues identified in the area of consumer economics were:

- (1) Hurricanes Katrina and Rita damaged or destroyed nearly 1/3 of Louisiana's housing units;
- (2) 10% of all LA mortgages are past due, suggesting rising foreclosure rates;
- (3) Louisiana high school seniors answered correctly only 45.3% of questions on survey of personal financial basics;
- (4) 25-60% of American workers suffer from severe financial distress; three of four Americans are not saving enough; the average credit card debt per borrower is \$5,710 and
- (5) Louisiana has high rates of recidivism among newly released offenders.

What has been done

- (1) A 12-hour home-buyer ed course developed to expand home ownership among hurricane displaced; piloted, evaluated and delivered to 200+.
- (2) Foreclosure prevention task force organized; delivered statewide training.
- (3) 13 6-hr wksp. Reached 131 teachers, who will deliver financial ed to 10,107 HS students.
- (4) Saving and Investing for Life (SAIL), a workplace credit, saving and investing ed. series, was developed, piloted/evaluated/delivered to 537.
- (5) Curriculum developed and series of 8-hr fin. mgmt. classes were delivered to prisoners/probationers/parolees.

Results

- (1) Home-buyer education course reached over 200 potential home buyers. Of the participants, 28% became homeowners within 6 months. Most of these graduates have qualified for \$5,000-\$10,000+ in down payment assistance. 90% checked credit reports and changed saving and spending habits.
- (2) Over thirty educators/counselors have built their capacity to help consumers avoid foreclosure of their home and are assisting clientele.
- (3) Mean eval scores of students whose teachers completed the teacher training workshops increased 12%. Teacher's perception of their ability to teach financial management increased 45%.
- (4) Highly significant differences were realized in SAIL participants' knowledge and saving behavior. 100% established emergency funds; 91% are investing for retirement; 71% paid off high cost debt; 54% increased net worth. Employers may expect returns of up to \$4,024 per employee who improves his financial behavior.
- (5) Over 520 offenders have adopted skills for success in society. 93% learned how to develop a budget. 14

volunteers have been taught to deliver the series of classes.

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

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study

Evaluation Results

See Impact Report

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: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	27.0	0.0	28.0	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**

Activity for this previously-planned program reported within the 5 new NIFA initiatives.

2. Brief description of the target audience**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	95000	35500	0	0
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2009

Plan: 2

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	60	
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

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

Brief Explanation

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

1. Evaluation Studies Planned

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: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	30.0	0.0	58.0	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**

Efforts related to this previously-planned program are reported within the 5 new NIFA initiative areas.

2. Brief description of the target audience**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	180000	280000	0	0
Actual	0	0	0	0

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

Year: 2009

Plan: 1

Actual: 0

Patents listed**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
Plan	0	60	
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
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

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: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	21.0	0.0	20.0	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**

Effort related to this previously-planned program has been reported under one of the 5 new NIFA initiatives

2. Brief description of the target audience**V(E). Planned Program (Outputs)****1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	62000	30000	0	0
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2009

Plan: 2

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	10	
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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

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

1. Evaluation Studies Planned

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

Evaluation Results

Key Items of Evaluation