2013 Louisiana State University Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

The LSU Agricultural Center (LSU AgCenter) integrates the functions of the Louisiana Agricultural Experiment Station (LAES) and the Louisiana Cooperative Extension Service (LCES). The mission of the LSU AgCenter is to enhance the quality of life for the people of Louisiana through research and extension programs that develop the best use of natural resources, conserve and protect the environment, enhance the development of existing and new agricultural and related enterprises, develop human and community resources, and fulfill the acts of authorization and mandates of state and federal legislative bodies.

The LSU AgCenter is one of 10 campuses in the LSU System. Headquartered in Baton Rouge, LA, the LSU AgCenter shares physical facilities with the LSU A&M campus, which is the state's flagship university. A major reorganization of the LSU System is still under discussion and portions of the reorganization plan have been implemented. Multiple transition teams appointed to study and make recommendations regarding this process have completed their work and submitted reports. The LSU AgCenter was represented on most of those transition teams.

During this reporting year, many personnel and programming changes have been made in the LSU AgCenter which support the LSU System's reorganization plan for the LSU AgCenter to become the hub of all agriculture-related activities in higher education for the state. With the retirement of the Extension Director and Associate Director in spring of 2013 and the re-assignment of the Research Director to another administrative role in the LSU AgCenter, the LSU AgCenter Chancellor, Dr. William "Bill" Richardson, also assumed the roles of Extension Director and Research Director. To further support the future structure of the LSU System, Dr. Richardson also assumed a new title of LSU Vice President for Agriculture and Dean of the College of Agriculture upon retirement of the long-time Dean of the college.

Also during this reporting period, the LSU AgCenter was organized into four (4) main program areas--**Animal Sciences & Natural Resources, Plant and Soil Sciences, Food & Nutrition, and 4-H Youth Development**-- and Program Leaders were named for each area. The purpose of this programmatic restructuring was to allow for more coordinated and integrated programming across both extension and research throughout the state. As of this date, the LSU AgCenter has faculty and staff located in 12 research and extension departments on campus. Regional Directors in each of the five (5) geographic regions of the state administratively supervise faculty and staff at 17 agricultural experiment stations, 64 parish extension offices and in regional offices. Program leaders, regional directors and department heads cooperate to lead faculty in developing focused programs to address the state's most critical needs.

In FY2013, approximately 17.83% of the LSU AgCenter's overall budget was provided by federal funds; 51.58% by state funds and 30.59% by self-generated funds, grants, contracts and gifts. Limited resources at all levels have made it challenging to maintain vital LSU AgCenter programs. State budget cuts exceeding 25% since 2008 have significantly affected programs jointly funded with state and federal dollars. Reduced operating and travel budgets, coupled with a reduction of over 340 FTEs/SYs across the organization in the last five years greatly challenge the ability to maintain the traditional level of program diversity across both research and extension. Nearly 100 of the 340 FTE reductions were from

retirements, resulting in the loss of faculty and staff with a wealth of knowledge and expertise in major program areas. To meet these challenges, every program and unit in the LSU AgCenter has been and will continue to be under critical review to assess impact and relevance to the LSU AgCenter's role, scope and mission. The operational business plan is being continuously revised to include proposed measures to improve program efficiency and effectiveness. Throughout this process, some programs have been consolidated or realigned while others are being eliminated. Across program areas, increased reliance on new technologies and tools such as social media and virtual delivery methods are evident. Enhanced efforts to secure sustainable funding from other sources such as grants and local funds and dependence on trained volunteers have allowed the continued delivery of many key programs that are considered to be the highest priority. Sustaining strong, high quality research and extension programs in core mission areas will continue to be the goal as the LSU AgCenter adjusts to these new budget realities.

During FY2013, the LSU AgCenter directed research and extension education programs in 10 priority program areas:

1. **Animal Enterprises (Global Food Security and Hunger)** which focuses on the primary livestock and aquaculture industries in the state, including beef, horses and crawfish.
2. **Field Crops (Global Food Security and Hunger)** which focuses on the primary Louisiana field crops and cropping systems including sugarcane, cotton, corn, soybeans, sweet potatoes and rice.
3. **Food Access (Global Food Security and Hunger)** which focuses on providing access to healthy and affordable foods to all Louisiana residents;
4. **Food Safety** which focuses on seafood safety, consumer and food handler food safety and certification programs;
5. **Horticulture** which focuses on consumer horticulture; urban floriculture; and home, school and community gardens and includes such premiere programs as the Louisiana Master Gardener Program;
6. **Human Nutrition and Food (including Childhood Obesity)** which focuses on the prevention of chronic disease and obesity-related illnesses in Louisiana children and adults;
7. **Natural Resources & the Environment (Climate Change)** which focuses on the state's forestry industry, watershed ecology, coastal plants, water quality and waste issues and includes the state's nationally-recognized Louisiana Master Farmer Program;
8. **Resilient Communities and Economies** which focuses on disaster education and recovery, risk awareness, sustainable housing, agritourism, and rural broadband connectivity;
9. **Sustainable Energy** focusing primarily on the production of biomass feedstocks from energy cane for biofuel production; and
10. **Youth Development** which focuses on providing positive experiences for youth in the state.

NOTE: This report reflects the realignment of previously-identified NIFA planned program areas into the state's priority program areas. While the planned program areas have been re-titled to better meet our in-state needs, research and extension work is still being conducted in each of the five NIFA priority areas. For example, in this report, the Human Nutrition and Food program area now includes program efforts in both childhood and adult obesity. This change has occurred in an attempt to better align program priority areas with the newly-established LSU AgCenter priority program areas and in preparation for developing a coordinated Plan of Work and Report of Accomplishments with our 1890 partner.

The LSU AgCenter has continued to focus on effectively evaluating and communicating the impacts of LSU AgCenter programs to key stakeholders and to engage them in charting a path for the future of the LSU AgCenter. The LSU AgCenter follows a four-year plan to evaluate its key programs. The impact reports contained within each program priority area report reflect the results of the most recent evaluations conducted in that area. To more effectively communicate LSU AgCenter efforts and impacts, Parish Profiles and Experiment Station Profiles were updated. These two-page documents are a snapshot of the parish or station which highlight major program impacts and identify emerging issues and LSU AgCenter plans to address those issues. Communicating the public value of LSU AgCenter programs was also part

of this process.

Research Project Summary

Louisiana Agricultural Experiment Station (LAES) scientists located on the Louisiana State University and Agricultural and Mechanical College campus and at Research Stations distributed across the state, continue to serve stakeholders by coordinating research relevant to Louisiana agriculture. Research scientists have been successful in obtaining significant levels of funding from external agencies and private industries to support projects. Research projects continue to become more focused and follow the operational business plan detailing core areas for the future. More faculty also have become involved in integrated projects to identify stakeholder needs and which allows a more rapid distribution of science-based information. Results are disseminated to producers, consultants, agribusinesses, government agencies, and other stakeholders, both directly and through a statewide network of extension agents and integrated faculty.

Extension Project Summary

In spite of the reduction in the number of Extension faculty and staff positions during the previous five years, Louisiana Cooperative Extension Service (LCES) effectively maintained delivery of all main programs in each of Louisiana's 64 parishes. These programs were conducted by Extension faculty housed in parish, regional and campus offices. Programs are created in response to needs identified by stakeholders. Research-based information is disseminated to stakeholders through time-honored delivery methods such as group meetings, one-on-one contacts and printed media, as well as through more current delivery methods such as Web-based technology and social media. During this past year, the Family and Consumer Science (FCS) program was moved from the Department of 4-H Youth and Family Development to the newly-formed School of Nutrition and Food Sciences to further integrate the extension, research and teaching functions related to this key program area.

Local support continues to be a critical element in allowing the conduct of quality programs at the parish level. In 2004, a goal was set to raise the total amount of local financial salary support contributed locally to 20% to bring Louisiana more in line with the three-partner funding support model and help bridge the gap left by reductions in federal and state funding. This goal was achieved in July 2013, bringing the amount of local salary and benefits support for local agents and administrative support staff in parish LCES offices to approximately $3.5 million. Additionally, local governments provide office space, equipment, vehicles, and the like valued at approximately $3.5 million. This results in a total contribution of local entities of approximately $7 million to support local programing.

Over the past several years, increased emphasis has been placed on accountability and reporting and significant changes have been made in the extension reporting system. Additional training was conducted, frequency of reporting was increased and more individuals were required to report into the system in order to achieve improved documentation of overall program effort.

NOTE: Extension numbers within this report are a reflection of the effort reported by extension faculty and may show variance from previous years due to the change in the institution's data collection process. Also of note is that FTEs reported in the Summary below represent all professional FTEs regardless of funding source, which had not been reported prior to FY 2012 and also reflect a change in the extension reporting process.

Summary

Although undergoing major changes and facing repeated economic challenges, the LSU AgCenter has and will continue to deliver high-quality, relevant, timely and effective programs to meet stakeholder

needs.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	231.0	0.0	138.0	0.0
Actual	332.4	0.0	127.3	0.0

II. Merit Review Process

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

- Internal University Panel
- External Non-University Panel

2. Brief Explanation

Historically, NIFA program reviews have been conducted on a rotational basis across departments and primary program areas and plans are being made to resume external university panel reviews of programs and departments. Additionally, stakeholders provide annual reviews of LSU AgCenter programs through the advisory leadership system. In light of the current budget situation and the reorganization, the most intense reviews during the reporting year have been conducted by an internal team of LSU AgCenter administrators, program leaders and various stakeholder groups. These groups continue to evaluate each and every program and position in the LSU AgCenter in an effort to identify the most effective programs and to formulate a plan for eliminating, reducing and/or combining less effective programs in order to maximize limited resources. Key factors considered in making specific programmatic decisions included the program's relevance to the LSU AgCenter mission, impact on the state, economic development potential, responsiveness to stakeholder needs, industry and clientele support and extramural funding opportunities. A detailed business plan outlining the findings and recommendations of this group has been developed and is providing guidance for significant program modifications throughout the organization.

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

Brief explanation.

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

Internally, members elected to the LSU AgCenter's Faculty Council represent the interests of faculty in administrative and programmatic issues. Additionally, extension and research faculty program teams, such as the Horticulture, Forestry and Nutrition Teams, convene at various times during the year to:

- Improve communication and networking among research and extension faculty with similar responsibilities in 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
- Develop mechanisms to measure program impact

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

1. Method to identify individuals and groups

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

Brief explanation.

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

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

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public

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 this reporting period. Reports of significant program accomplishments and impacts are given and typically a modified nominal group technique is used to identify and prioritize critical issues which call for subsequent LSU AgCenter educational programs or research. Additionally, input is collected from stakeholders through annual base program evaluations which are conducted across all program areas in a four-year cycle. Focus group meetings, meetings with commodity groups and surveys are conducted throughout the year to receive additional input from stakeholders. Grass roots meetings, other listening sessions and various forms of dialogue using social media tools are also being used more frequently to gather stakeholder input.

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 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 scarcer, the use of stakeholder input is critical in identifying areas in which resources can be best leveraged and identifying programs with the greatest public value. The input was used extensively in the development of the LSU AgCenter Business Plan and significant organizational restructuring is ongoing as a result of that input. As the AgCenter continues to evolve in response to the state's changing needs, the voice of our clients will continue to be heard through their active engagement in the programming process.

Brief Explanation of what you learned from your Stakeholders

Our stakeholders have asked us to focus on the following issues:

- Multiplying agricultural productivity and sustaining natural resources

- Conserving and protecting the environment by addressing water quality and waste management issues
- Enhancing and developing agricultural and value-added enterprises
- Expanding workforce development by developing leadership and community resources
- Providing positive youth development experiences for Louisiana youth
- Promoting healthy and productive families, youth and individuals, focusing specifically on childhood obesity and food safety

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
4794050	0	3593722	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	6697066	0	4107361	0
Actual Matching	6697066	0	4107361	0
Actual All Other	10083533	0	29502639	0
Total Actual Expended	23477665	0	37717361	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	3232771	0	1086159	0

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Animal Enterprises--Global Food Security and Hunger

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
135	Aquatic and Terrestrial Wildlife	10%		4%	
216	Integrated Pest Management Systems	0%		2%	
301	Reproductive Performance of Animals	0%		15%	
302	Nutrient Utilization in Animals	10%		10%	
303	Genetic Improvement of Animals	0%		4%	
304	Animal Genome	0%		2%	
305	Animal Physiological Processes	0%		4%	
307	Animal Management Systems	60%		35%	
308	Improved Animal Products (Before Harvest)	0%		5%	
311	Animal Diseases	10%		11%	
313	Internal Parasites in Animals	0%		4%	
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	0%		2%	
601	Economics of Agricultural Production and Farm Management	10%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	48.0	0.0	89.0	0.0
Actual Paid Professional	19.9	0.0	27.8	0.0
Actual Volunteer	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**
510138	0	896973	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
510138	0	896973	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
768097	0	6251736	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The LSU AgCenter Animal Enterprises program includes livestock and aquaculture production systems. The state's livestock industry includes approximately 800,000 head of livestock on 40,000 farms and 375 broiler producers that produce 900 million pounds of broiler meat. Overall, the total livestock industry yielded a gross farm value of $1.94 billion in 2012. Considering value added indexes the total value exceeded $3 billion. Additionally, the Louisiana aquaculture industry had 184,000 acres in production on 2,300 farms with a total value of $530 million in 2012. Much of the work in this area targets outcomes which supports NIFA-identified outcomes in the Global Food Security and Hunger program area.

Activities include research and extension programs directed towards animal agriculture and aquaculture. Extension outreach uses group and individual methods; mass media; applied research studies; result demonstrations; and field days, which incorporate the latest technological advances and use of social media. Research outputs are measured through scientific presentations at field days, local and national meetings and publications.

This year, the equine and aquaculture programs were the animal enterprise areas evaluated in our four-year base program evaluation cycle. The results of the evaluations are included in Outcome Report section of this report.

2. Brief description of the target audience

Livestock and poultry producers, horse owners, crawfish farmers and consumer groups with an interest in enhancing the value of animal commodities.

3. How was eXtension used?

The resources provided through eXtension were used to supplement and enhance learning experiences provided by LSU AgCenter faculty. Animal science state specialists have been involved in the development, implementation, and management of livestock and poultry Community of Practice (CoP). The state poultry specialist is part of a team that developed the small and backyard poultry flock CoP. The resources on recreational pond management have been used substantially and the state aquaculture specialist serves on the Fresh Water Aquaculture CoP and as the coordinator for the recreational pond section.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	65020	205578	15565	0

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

Patent Applications Submitted

Year:	2013
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	1	51	52

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	1141300

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	946486

Output #3

Output Measure

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

Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of pesticide applicator certifications (private and commercial) renewed
  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	Adoption of recommended practices by Louisiana livestock producers
2	Adoption of recommended practices by Louisiana row crop producers
3	Adoption of recommended practices by Louisiana commercial fruit and vegetable producers
4	Adoption of recommended practices by Louisiana aquaculture producers
5	Louisiana individuals below poverty level adopt 3 or more practices regarding the use of limited resources to prepare and consume healthier foods.

Outcome #1

1. Outcome Measures

Adoption of recommended practices by Louisiana livestock producers

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The horse industry is the 4th largest component of the agricultural economy of Louisiana. In 2012, 113,000 horses were owned by an estimated 42,000 people, resulting in an economic effect of $2.4 billion per year.
Research conducted by the LSU AgCenter and other equine-related organizations is vital for sustaining the Louisiana equine industry. When new information is released concerning the equine industry, disseminating information typically speeds adoption. LSU AgCenter education efforts play a vital role in the adoption of new research practices.

What has been done
LSU AgCenter specialists and area agents provide educational seminars and workshops, host clinics, and collaborate with other equine associations to provide demonstrations and disseminate information on the latest equine management techniques and issues. AgCenter personnel create and use written materials, internet web sites, social media and television programs to reach horse owners and enthusiasts. A statewide survey of equine owners was conducted to gauge the adoption of recommended practices and to determine the need for future educational programs. A total of 161 respondents provided valuable feedback on equine education and research efforts. Of the respondents, 70% participated in recreational horse activities and 50% were involved in showing or competition. Thirty-four percent of the respondents were volunteers, 20% were trainers, 17% were instructors, 17% were breeders, 17% were professionals and 14.5% were owners of equine boarding facilities.

Results
Asked about their use of specific equine production practices recommended by the LSU AgCenter, 82% of the respondents indicated they had adopted recommended riding and training practices; 71% adopted healthcare, vaccination and deworming practices; 65% adopted

pasture/forage practices; 64% adopted hoofcare practices; 61% adopted feeding practices; 60% adopted bits and saddles practices; and 56% adopted recommended practices regarding the selection of new horses. On average, a total of 66% of the respondents have adopted research-based practices that have been emphasized in LSU AgCenter equine education programs. When asked specifically what equine educational programs are needed throughout the state, seventy-four percent of respondents believe additional horsemanship/training programs are needed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
307	Animal Management Systems
311	Animal Diseases
601	Economics of Agricultural Production and Farm Management

Outcome #2

1. Outcome Measures

Adoption of recommended practices by Louisiana row crop producers

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Adoption of recommended practices by Louisiana commercial fruit and vegetable producers

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Adoption of recommended practices by Louisiana aquaculture producers

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Louisiana supports one of the most diverse commercial aquaculture sectors in the nation, with a current value of over $410 million annually. Important industries include farmed crawfish, captive-raised alligators, cultured oysters, pet turtle hatchlings, catfish, minnows and a variety of minor species. The Louisiana aquaculture industry includes over 2300 operations throughout the state in addition to numerous support industry facilities (feed mills, processing plants, wholesale buyers, etc.). Additionally, there are an estimated 120,000 private (non-commercial) ponds within the state, occupying over 50,000 acres, with an estimated value of $62 million annually in fish production, recreation and enhancement of property values. Taken together, these numbers represent countless commercial and residential stakeholders with a need for access to aquaculture training, advice and educational materials.

What has been done

The LSU AgCenter has developed aquaculture educational programming to meet diverse clientele needs while adapting to reduced FTEs over time. In conjunction with the State Specialists, County- and Fishery Agents visit farms to counsel producers on specific problems. They also organize group meetings, field days, and demonstrations to disseminate information on the latest production technology. Written materials (both hard copy and web-based) and radio and television news are also used to reach producers and other users of aquaculture information. It has been widely accepted that the AgCenter has played a major role in influencing the decisions of producers regarding various management practices involving aquaculture production and pond management. However, this influence is monitored periodically in a quantitative manner by the AgCenter to provide better educational programs to its stakeholders.

Results

All responding crawfish producers had adopted at least some of the twelve research-based practices that have been emphasized in extension education programs. Overall, recommended practices had an average adoption rate of 64.2 percent. When practices related to oxygen measurement (an activity which most producers have long avoided) are excluded, adoption rates increased to an average of 71.1 percent. While adoption of specific recommended practices varied among all respondents and yield levels, planting/managing forage for crawfish and reduced reliance on surface water were both clearly associated with higher yields. An economic assessment of the recommended production practices was developed based on published enterprise budgets for crawfish production (LSU Department of Agricultural Economics & Agribusiness: A.E.A. Information Series No. 293 - February 2013) and field observations in commercial operations. Differences in net returns based on ignoring or adopting certain practices individually were extrapolated on a per-acre basis in relation to total costs and projected yields. Potential economic impact of the recommended practices ranges from $25/acre for using manufactured bait when pond temperatures are >70 degrees F to $420/acre for avoiding early flooding while the temeratures are still hot.

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
601	Economics of Agricultural Production and Farm Management

Outcome #5

1. Outcome Measures

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

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See results section of equine and aquaculture impact reports.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Field Crops--Global Food Security and Hunger

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	5%		4%	
102	Soil, Plant, Water, Nutrient Relationships	5%		11%	
103	Management of Saline and Sodic Soils and Salinity	0%		2%	
111	Conservation and Efficient Use of Water	0%		2%	
136	Conservation of Biological Diversity	0%		2%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		4%	
202	Plant Genetic Resources	0%		3%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		5%	
204	Plant Product Quality and Utility (Preharvest)	5%		9%	
205	Plant Management Systems	50%		10%	
206	Basic Plant Biology	0%		1%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		8%	
212	Pathogens and Nematodes Affecting Plants	5%		16%	
213	Weeds Affecting Plants	5%		11%	
215	Biological Control of Pests Affecting Plants	0%		1%	
216	Integrated Pest Management Systems	10%		7%	
405	Drainage and Irrigation Systems and Facilities	0%		2%	
601	Economics of Agricultural Production and Farm Management	5%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Extension	Research

Year: 2013	1862	1890	1862	1890
Actual Paid Professional	31.4	0.0	41.7	0.0
Actual Volunteer	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**
804242	0	1345459	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
804242	0	1345459	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1210918	0	9353143	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The LSU AgCenter strives to serve a very diverse food and fiber sector in the state of Louisiana. With the farm gate value of plant-based enterprises in the state exceeding $6.5 billion in 2012, the importance of agriculture as an economic driver in the state is evident. This is particularly evident in regions of the state in which production agriculture, and more specifically, row crop agriculture, is the single largest segment of those rural economies. To ensure the economic well-being of the agricultural industry and its ability to continue to be a major contributor to the state's economy, the LSU AgCenter provides a variety of educational opportunities and research based information to row-crop operations to assist them in making better production, environmental, and financial decisions. Additionally, the LSU AgCenter continues to lead the way in developing best management practices to ensure the environmental impact from production agriculture is minimized. Educational opportunities and information in the areas of financial management, risk management, and marketing are also conducted.

Educational activities utilize group and individual methods; mass media; research studies; result demonstrations; field days and social media tools such as Facebook, blogs, Twitter and YouTube. Decision support tools such as Smart Phone apps and spreadsheets have sparked interest among producers. Each component of the program is designed to provide producers with valuable information to help them make decisions that will result in increased yield, reduced costs, increased revenues, and to mitigate environmental impacts.

This year, the **soybean and wheat program** was evaluated during our four-year base program evaluation process. The data from that evaluation is included in the Outcomes Section of this report.

2. Brief description of the target audience

Approximately 6,500 growers with slightly over 3 million acres of land in production:

- **Cotton**--415 producers with 225,095 acres in production which produced 228 million pounds of cotton.
- **Feed grains**--1,700 producers with 650,000 acres in production who produced 103 million bushels of feed grains, including corn, grain sorghum and oats.
- **Rice**--1,030 producers with 391,000 acres in production who produced 2.6 billion pounds of rice.
- **Soybeans**--2,300 producers with 1.12 million acres in production who produced 50 million bushels of soybeans.
- **Sugarcane**--480 producers with 427,000 acres in production who produced 1.7 million tons (3.4 billion pounds) of raw sugar and 102 million gallons of molasses.
- **Sweet potatoes**--50 producers with 9,700 acres in production who produced 3.9 million bushels of sweet potatoes.
- **Wheat**--530 producers with 256,000 acres in production who produced 14.8 million bushels of wheat.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	112001	388725	14509	0

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

Patent Applications Submitted

Year:	2013
Actual:	3

Patents listed
Device for Turbulence Reduction
Rice Cultivar Designated CL152
Abiotic Stress Resistance

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	32	119	151

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	3003209

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	2456575

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased profitability and sustainability of Louisiana crops and cropping systems.

Outcome #1

1. Outcome Measures

Increased profitability and sustainability of Louisiana crops and cropping systems.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In 2012, average soybean yields in Louisiana were a record 46 bushels per acre, more than 6 bushels higher than the 5-year average. In 2013, producers planted 1.12 million acres of soybeans and generated a state average yield of 48 bushels per acre. Over the last several years, a significant number of cotton and rice acres have been shifted into soybeans. In addition to this shift from competing crops, soybean acres have increased in non-traditional areas. Winter wheat yields for 2013 averaged 58 bushels in Louisiana. This yield produced a 9 bushel per acre increase over 2012 and was 3 bushels higher than the five-year average. Given the generally successful 2013 harvest, some anticipation existed for winter wheat acres planted in Louisiana to approach the 260,000 acres planted in 2012 and harvested in 2013. However, the price outlook for winter wheat during the fall of 2013 was down significantly from the previous year. As a result, winter wheat acres fell to 160,000 acres in the fall of 2013, down 100,000 acres from the previous year.

What has been done

The LSU AgCenter has an ongoing soybean educational program whereby county agents visit farms to counsel producers on specific problems, organize grower groups, plan field days, and establish demonstrations to disseminate information on the latest production technology. LSU AgCenter personnel use web based materials, written materials, and radio and television programs to reach producers and other users of soybean crop information. It is believed that the LSU AgCenter plays a major role in influencing the decisions of producers regarding various management practices involving soybean production. This influence is monitored periodically at advisory meetings by the LSU AgCenter to provide better educational programs to stakeholders and was formally evaluated statewide during this reporting period in the AgCenter's four-year base program evaluation process.

Results

On average, 92% of the respondents in the base program evaluation have adopted most of the 10 research-based practices that have been emphasized in extension education programs and another 6.6% are considering adoption. Among the most frequently adopted practices are: using herbicide for weed control (100%); using optimum seeding rates (99.3%); using fungicides for disease control (97%); soil testing (96.3%); planting certified varieties (95.6%)and planting during optimum planting dates (95.6%). Adopted, but not as frequently, were the practices of: using reduced tillage operations (73.7%); fertilizing according to soil test (81.8%) and using a record keeping system (89.6%)

Farmer's adoption of LSU AgCenter research-based information has contributed to increase yields and profitability. The increased production in 2013 on 1.12 million acres of soybeans resulted in an $89 million increase in revenue to the farm.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
136	Conservation of Biological Diversity
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
206	Basic Plant Biology
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

An evaluation was conducted and summarized in 2014. The evaluation was sent via email to soybean and wheat producers, crop consultants, among others in the sugarcane growing region of south Louisiana. A total of 216 evaluations were returned. Seventy percent of the respondents were growers, 12% were workers in governmental agencies, 11% were crop consultants, and 11% were others such as dealer representatives. Ninety-Eighty percent of the growers produced soybeans and 37% wheat. Eighty percent operated farms that were greater than 500 acres in size; 77% of the growers had been farming for greater than 15 years; 73% of the total respondents were over 45 years old while 45% were over 55 years old; Twenty-nine parishes were included in the responses and 98% of the respondents were male. The following results indicated the percentage of producers that have adopted recommended soybean production best practices:

- 100% of the respondents use herbicide for weed control
- 99.3% use optimum seeding rates
- 96.3% soil test
- 95.6% plant certified varieties

On average, a total of 92% of the respondents have adopted research-based practices that have been emphasized in extension education programs, with another 6.6% considering adoption of these 10 research-based production practices.

Results also indicate that the LSU AgCenter plays a major role in influencing the decisions of most Louisiana soybean and wheat producers. It is vital therefore, that county agents and specialists continue to prioritize person-to-person contacts in the Louisiana soybean and wheat industries and continue to deliver high quality educational programs that are responsive to the needs of the producers. It is also apparent that as technology becomes increasingly available, electronic information delivery will continue to increase in importance. Agents, specialists, and researchers must continue to build strong working relationships with crop consultants.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Food Access--Global Food Security and Hunger

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	0%		32%	
602	Business Management, Finance, and Taxation	0%		5%	
603	Market Economics	0%		5%	
606	International Trade and Development	0%		18%	
609	Economic Theory and Methods	0%		5%	
610	Domestic Policy Analysis	0%		17%	
611	Foreign Policy and Programs	0%		5%	
703	Nutrition Education and Behavior	50%		0%	
704	Nutrition and Hunger in the Population	50%		0%	
901	Program and Project Design, and Statistics	0%		5%	
902	Administration of Projects and Programs	0%		3%	
903	Communication, Education, and Information Delivery	0%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Actual Paid Professional	8.6	0.0	3.9	0.0
Actual Volunteer	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**
221154	0	125834	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
221154	0	125834	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
332983	0	874754	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Food accessibility is a major component of the LSU AgCenter's effort in the Global Food Security and Hunger area in Louisiana. The SNAP program provides the primary mechanism for delivering this program. Using a systems-based approach, this program targets the youth in the state that often do not have access to healthy foods for regular consumption. The overall goal is to create an environment of healthy, hunger-free kids. Sixteen (16) paraprofessionals support the work of extension faculty in delivering this program.

Activities include extension outreach using group and individual methods and mass media, all incorporating the latest technological advances and use of social media.

Note: Field crops, livestock, commercial fruits and vegetables and aquaculture programs, the other major components of the Global Food Security and Hunger effort, are included in separate sections of this report with Global Food Security and Hunger subtitles to better reflect the actual in-state programming and align with our data collection process.

2. Brief description of the target audience

Louisiana families and individuals living in poverty with limited access to fresh fruits and vegetables.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	64559	1737410	71287	0

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

Patent Applications Submitted

Year:	2013
Actual:	2

Patents listed

Water Soluble Drug-Solubilizer Powders and Their Uses
Thiol Acrylate Nanocomposite Foams

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	11	11

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	14779

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	13287

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of Louisiana individuals below poverty level who adopt 3 or more practices regarding the use of limited resources to prepare and consume healthier foods.

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Eighteen percent of Louisiana families with children and 26% of adults without children live in poverty. Poverty rates are higher among African Americans (45%) and Hispanics (40%) and for children 18 and under (20%). Louisiana ranks 16th in the country for SNAP participation in the following demographics: 60% Black, 31% White, and 3% Hispanic. For school lunch programs, 68% are represented by free and reduced-price students. Only 25% of adults eat five servings of fruits and vegetables daily and 39% are physically active. Louisiana ranks 48th in infant mortality rate in the U.S.

What has been done
SNAP-Ed agents and educators reached 45,616 youth and 30,208 adults through direct education and 808,667 through indirect methods such as mass media including social media. Over 2548 youth and 794 adults were involved in classes on dietary guidelines; 3342 youth and 706 adults in food safety classes; 685 youth and 1391 adults in physical health classes; 1740 youth and 810 adults in garden-based nutrition classes; and 2550 youth and 2417 adults in food budgeting workshops. Pre- and post-test measures with participants in series of classes were used to collect data for a pedometer-determined physical activity portion of the evaluation. Pre- and post-test measures were also used to collect data for self-reports on knowledge gained and attitudes changed with regard to healthier food choices

Results
An analysis of data collected from adult audiences revealed a statistically significant increase from pre-test to post-test on the following variables: belief that they could make healthy fruit and vegetable choices; attitude about healthy food choices; belief that physical activity was within their control; perception of social support (subjective norms); and attitude about physical activity.

The analysis of data from youth audiences revealed no significant difference from pre-test to post-test on the following variables: belief that they could make healthy fruit and vegetable choices; affective attitude about physical activity; and instrumental attitude about physical activity. However, youth audience responses did reveal a significant difference between pre-test and post-test on: Participants' attitude about healthy food choices; and perception of social support relative to changes in healthy habits and choices (subjective norms).

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

An analysis of data collect from adult audiences revealed a statistically significant increase (t84=3.251, p<.01) in participants' belief that they could make healthy fruit and vegetable choices (PBC) from pre-test (M=3.32; SD=.697) to post-test (M=3.58; SD=.515). Participants' attitude about healthy food choices also showed a statistically significant improvement (t84=2.125, p<.05) from pre-test (M=2.97; SD=.783) to post-test (M=3.14; SD=.766). Analysis revealed a statistically significant increase (t84=5.911, p<.001) in participants' belief that physical activity was within their control (PBC) from pre-test (M=2.77; SD=.753) to post-test (M=3.16; SD=.632). The change in perception of social support (subjective norms) was also statistically significant (t84=2.621, p<.05) from pre-test (M=2.12; SD=.900) to post-test (M=2.37; SD=.905). Participants' attitude about physical activity also showed a statistically significant improvement (t83=3.424, p<.01) from pre-test (M=.67; SD=.742) to post-test (M=.98; SD=.819).

The analysis of data from youth audiences revealed no significant difference (t119=-0.042, p>.05) in participants' belief that they could make healthy fruit and vegetable choices (PBC) from pre-test (M=3.18; SD=.710) to post-test (M=3.17; SD=.733). However, participants' attitude about healthy food choices showed a statistically significant improvement (t119=3.288, p<.01) from pre-test (M=2.26; SD=.784) to post-test (M=2.48; SD=.761). The change in perception of social support relative to changes in healthy habits and choices (subjective norms) was statistically significant (t118=2.595, p<.05) from pre-test (M=2.73; SD=.732) to post-test (M=2.91; SD=.743). Participants' affective attitude about physical activity also showed no significant difference (t117=-0.296, p>.05) from pre-test (M=.41; SD=.979) to post-test (M=.38; SD=1.043). Participants' instrumental

attitude about physical activity also showed no significant difference (t117=-0.436, p>.05) from pre-test (M=1.32; SD=.750) to post-test (M=1.28; SD=.812).

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Food Safety

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
502	New and Improved Food Products	0%		12%	
504	Home and Commercial Food Service	60%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	40%		39%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%		43%	
723	Hazards to Human Health and Safety	0%		6%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	2.0	0.0	3.1	0.0
Actual Paid Professional	1.7	0.0	6.9	0.0
Actual Volunteer	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**
42490	0	222630	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
42490	0	222630	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
63976	0	1547642	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

LSU AgCenter food safety efforts include group workshops, classes, and certification programs, as well as individual contacts with clients to answer specific questions and concerns regarding food safety. A variety of educational materials and resources are used to address food safety-related issues. Research focuses on identifying ways to minimize food safety threats related to Louisiana-produced food products.

With the retirement of one extension food safety specialist and the resignation of another, coordinated effort in this program has been somewhat lacking. The program is being re-staffed and realigned and it is anticipated that program efforts will be on track again soon. The statewide food safety program is scheduled for a full evaluation in the fall of 2014.

2. Brief description of the target audience

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

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	3250	319624	2798	0

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	2	13	15

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of individuals certified through food safety programs

Year	Actual
2013	100

Output #2

Output Measure

- Number of Web page views

Year	Actual
2013	15778

Output #3

Output Measure

- Number of Web page visits

Year	Actual
2013	14652

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 commercial and non-commercial entities.
2	Identify ways to minimize food safety threats related to Louisiana-produced food products through research.

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Consumer food handling practices and changes in food production, processing and distribution have increased the scope of foodborne illness outbreaks resulting in national and multi-national occurrences. Food safety misinformation may result in illness or adverse financial consequences. Some commercial processors and food handlers, such as meat and poultry, seafood and canning are required to have certified food safety training. For commercial clients, failure to achieve food safety standards can result in the destruction of product or the shutdown of the facility, both of which are very costly.

What has been done
Three hundred twenty-five extension activities including food safety information regarding thawing and storing foods correctly reached over 15,000 individuals through health fairs, Family Nutrition Nights, and Smart Choices classes.

Additionally, LSU AgCenter faculty conducted 5 nationally accredited HACCP courses (3 seafood, 2 meat and poultry) for processors and assisted FDA in conducting a seafood course for their inspectors. One hundred eighty-nine individuals participated in these food safety education efforts. Approximately 120 processors were assisted with HACCP plans and with regulatory problems. Faculty also fielded food related safety questions from individuals, some of whom were interested in starting a food business.

Results
In a statewide study of adult participants in the EFNEP program, 47% of 1348 participants showed improvement in or or more of the targeted food safety practices (i.e. thawing and storing foods correctly). Sixteen percent of 1348 participants showed improvement in both targeted food safety practices. Among 2081 youth participating in a study, 52% improved in washing hands and 50% used safe food handling practices more often and gained knowledge about food safety.

In the case of 15 processors who were cited for failure to meet food safety standards, only 2 processors were required to destroy product and none had to shut down.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Hepatitis A virus (HAV) infection is the leading worldwide cause of acute viral hepatitis, and outbreaks caused by this virus often occur due to fecal polluted waters. Rapid concentration and detection of viral contamination in water environments can prevent large scale economic loss and can identify the source of contamination within a short time. However, conventional methods for virus concentration are often laborious, time consuming, and subject to blockage issues. Furthermore, most methods require a secondary concentration step to reduce the final volume of samples.

What has been done
LSU AgCenter researchers developed a concentration/elution method in combination with real-time PCR (qPCR) for detection of HAV from seawater using zeolite.

Results

In the method, seawater was spiked with HAV and the viruses were extracted by zeolite. The viruses were then eluted with sodium dodecyl sulfate and detected via qPCR. Zeolite was able to extract virus particles from seawater with ~99% efficiency in less than 5 min and remained efficient in large volumes of seawater (10 L). The entire concentration/elution method was done in approximately 2 hours and was at least 50 times more sensitive than direct detection of virus in seawater.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Food Safety Practices of EFNEP adult participants improved as indicated by the following:

28% (380 of 1348) more often followed the recommended practices of not allowing meat and dairy foods to sit out for more than two hours. Furthermore 23% (307 of 1348) ALWAYS followed the recommended practice.

34% (460 of 1348) more often followed the recommended practices of not thawing foods at room temperature. Furthermore 6% (82 of 1348) ALWAYS followed the recommended practice.

37% (496 of 1348) at ENTRY demonstrated acceptable food safety practices (i.e. thawing and storing foods properly). 55% (747 of 1348) at EXIT demonstrated acceptable food safety practices (i.e. thawing and storing foods properly).

4% (54 of 1348) at ENTRY demonstrated acceptable scores in all three categories listed above: food resource management, nutrition practices, and food safety. 14% (185 of 1348) at EXIT demonstrated acceptable scores in all three categories listed above: food resource management, nutrition practices, and food safety.

When asked about washing hands after handling raw meat, 73% washed their hands almost always at entry; however 87% reported washing their hands almost always at exit.

47% (627 of 1348) of participants showed improvement in **one or more** food safety practice (i.e. thawing and storing foods correctly).

16% (213 of 1348) of participants showed improvement **in both** food safety practices (i.e. thawing and storing foods correctly).

Youth:

K- 2nd grade: 53% improved in washing their hands. 52% of (1082 of 2081) children improved knowledge or skill related to handling food safely

3-5th grade: 21% improved in washing hands before food preparation. 18% improved in putting leftovers in the refrigerator within a 2 hour limit.

39% of (1605 of 4068) children and youth improved 1 or more knowledge, skill(s), or behavior(s) related to handling food safely

14% of (570 of 4068) children and youth improved 2 or more knowledge, skill(s), or behavior(s) related to handling food safely

6% of (224 of 4068) children and youth improved 3 or more knowledge, skill(s), or behavior(s) related to handling food safely

6-8th grade: 31% improved in washing hands before meals and 52% improved in putting food back in the refrigerator within a 2 hour limit.

67% of (994 of 1478) youth adopted and practiced 1 or more behavior(s) necessary to handle food safely

41% of (609 of 1478) youth adopted and practiced 2 or more behavior(s) necessary to handle food safely

15% of (222 of 1478) youth adopted and practiced 3 or more behavior(s) necessary to handle food safely

9-12th grade: 40% improved in washing hands before meals and 47% improved in putting food back in the refrigerator within a 2 hour limit.

74% of (357 of 482) youth adopted and practiced 1 or more behavior(s) necessary to handle food safely

45% of (219 of 482) youth adopted and practiced 2 or more behavior(s) necessary to handle food safely

27% of (130 of 482) youth adopted and practiced 3 or more behavior(s) necessary to handle food safely

15% of (71 of 482) youth adopted and practiced 4 or more behavior(s) necessary to handle food safely

Overall, 52% of (1082 of 2081) improved in washing hands. 50% of (4038 of 8109) children and youth used safe food handling practices more often or gained knowledge.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Horticulture

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
202	Plant Genetic Resources	0%		21%	
204	Plant Product Quality and Utility (Preharvest)	0%		25%	
205	Plant Management Systems	85%		28%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		3%	
212	Pathogens and Nematodes Affecting Plants	0%		9%	
213	Weeds Affecting Plants	10%		3%	
405	Drainage and Irrigation Systems and Facilities	0%		2%	
601	Economics of Agricultural Production and Farm Management	0%		4%	
604	Marketing and Distribution Practices	0%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	20.0	0.0	4.2	0.0
Actual Paid Professional	28.2	0.0	13.8	0.0
Actual Volunteer	2424.0	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**
723101	0	445260	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
723101	0	445260	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1088747	0	3095285	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Key horticulture programs addressed issues related to home landscaping; home, community and school gardens; commercial ornamentals; and turf. The Louisiana Master Gardener program provided trained volunteers to assist in addressing the growing needs of consumer horticulture audiences.

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

2. Brief description of the target audience

Horticulture professionals, home gardeners, nursery industries, athletic field managers, Louisiana Master Gardener Volunteers, K-12 schools with gardens and related agribusiness clientele.

3. How was eXtension used?

287 questions submitted through eXtension's Ask an Expert system were answered by extension horticulture specialists.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	214247	16953065	24235	0

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

Patent Applications Submitted

Year:	2013
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	5	29	34

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	2175417

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	1951647

Output #3

Output Measure

- Number of Louisiana Master Gardeners completing training series

Year	Actual
2013	302

Output #4

Output Measure

- Number of service hours contributed by all Louisiana Master Gardeners

Year	Actual
2013	73198

Output #5

Output Measure

- Number of school gardens established and/or maintained

Year	Actual
2013	230

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Adoption of recommended horticultural practices
2	Louisiana Master Gardener volunteers supplement the delivery of consumer horticulture program to clients.
3	Adoption of recommended practices by commercial horticulture producers and professionals
4	Adults effectively instruct and interact with youth in developing and managing school gardens.

Outcome #1

1. Outcome Measures

Adoption of recommended horticultural practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

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

What has been done
{No Data Entered}

Results
{No Data Entered}

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana has an estimated 481,000 home vegetable gardens with a projected annual production of $240 million. There also are countless home landscapes requiring maintenance and development that relates to an ever-increasing need by consumers for research-based horticulture information, training and timely access to LSU AgCenter resources. Reduced numbers of personnel coupled with increased interest in consumer horticulture, home gardening and home grounds has exacerbated the need for trained volunteers to assist in the delivery of quality educational horticulture programs.

What has been done
The Louisiana Master Gardener (LMG) Program involves a network of highly-trained volunteers and was developed to strengthen the capacity of the LSU AgCenter's Cooperative Extension Service ability to effectively and efficiently meet the educational needs of home gardeners in Louisiana. Louisiana Master Gardeners complete the standardized LMG training course and are required to donate 40 hours of service the first year and 20 hours each year thereafter to maintain certification. Now in its 20th year, there are 26 LMG training programs in 53 of 64 parishes that represent 96% of Louisiana's population centers. The LMG Program follows the standard Master Gardener format and participants interact with Habitat for Humanity, garden foundations, parish beautification programs, local farmers' markets, schools and community gardening programs, food banks, professional organizations, local master gardener associations, and Master Gardener programs in other states. In 2013, LMG volunteers: worked with school and 4-H youth, nursing home residents, and home gardeners; answered telephone gardening questions and e-mail communications; provided information at on-site plant health care clinics and gardening information booths; conducted demonstrations, community and school gardening programs, public presentations, gardening seminars, workshops, garden shows, plant sales, educational tours, plant trials and evaluation; and urban tree protection and preservation programs; partnered

with civic organizations and municipal entities to complete landscape projects; used media efforts involving newsletters, publications, cable TV and television broadcasts; planned, organized and conducted conference events; and performed on-site consultations.

Results
The increased need for consumer horticulture information and enhanced accessibility to the LSU AgCenter has proven that highly trained LMG volunteers presenting science-based information are recognized in their community as an important and critical resource for gardening education. In 2013, the LMG Program trained 302 new volunteers which increased the active number of volunteers statewide to 2,424. LMG volunteers provided 73,198 hours of their time to Extension educational projects and exposed 5,752,134 residents in Louisiana to research-based, consumer horticulture information. This volunteer service, equivalent to 43 full-time employees, increased the human capacity of Extension by 21% and contributed an economic value of $1,787,410 to the state of Louisiana.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
213	Weeds Affecting Plants

Outcome #3

1. Outcome Measures

Adoption of recommended practices by commercial horticulture producers and professionals

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Vegetable growers and fruit producers, along with turf and ornamental professionals, desire information on production improvements and better management options and practices. Louisiana retail garden centers want to expand ornamental plant promotion and marketing efforts.

Timely communication of commercial horticulture happenings and research information is desired.

What has been done

The Louisiana Super Plants promotion program has named 29 plants for professionals to promote and market to consumers. Participants include 150 retail garden centers. The Field of Excellence Turfgrass Program continued and expanded into more schools. Nursery and turfgrass studies addressed establishment, production and best management practices issues. Native habit prairie plant establishment studies expanded. Breeding efforts in figs and peaches continued. Development of horticulture plants for wildlife was initiated. Ornamental plant breeding program was initiated and selection program continued. A nursery plant research survey was conducted. A water management survey was initiated. The Louisiana Fruit and Vegetable Growers Association held several outreach events and reached new clientele. Ornamental e-news updates and trial garden e-news reports continued. Enhanced social media efforts using Facebook, Twitter, blogs and Linked In were initiated.

Results

Nursery growers, retailers and landscape horticulturists were surveyed pertaining to interest in about 80 new plants being researched by the LSU AgCenter for possible future introduction and distribution. 25-35% of the plants represented were of high interest with retailers and landscapers to use/sell, while growers said about 12% of the plants would be highly considered for production in the next year. Sod growers learned about the production potential of zoysiagrass through education and research efforts. E-News updates and trial garden reports resulted in 65,000 contacts. A 2013 survey of Louisiana Nursery and Landscape Association members found the top research, extension, and marketing effort desired was the evaluation, development, distribution, and/or marketing of new plants. Plant categories in which there appears to be additional interest include: Native Trees and Shrubs - 26.6%, Louisiana Super Plants - 23.2%, Fruit Species/Varieties for Landscape Use -21.7%, Japanese Maple Varieties - 18.7%, Alternative Warm-season Bedding Plants for Shade - 18.2%, Low Care Roses -17.7%, Alternative Cool-season Bedding Plants - 15.3%, Hardy Hibiscus and Other Unique Hibiscus Species - 13.8%, Tropical and Semi-Tropical Plants - 13.3%, New Azaleas - 12.8%.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources
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
601	Economics of Agricultural Production and Farm Management

Outcome #4

1. Outcome Measures

Adults effectively instruct and interact with youth in developing and managing school gardens.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
School gardens can be an effective means of helping youth advance both academically and socially. It is estimated that there are about 230 school gardens in the state, most of which have been started and are maintained under the direction of LSU AgCenter extension agents. Through this hands-on experience, children learn not only about growing food, but also about habitats, insects and pollination. However, having well-trained, dedicated and willing adults to guide and direct the gardening project on a consistent basis is critical to the project's success.

What has been done
Workshops were conducted with K-12 teachers and teachers and directors in child care provider centers to educate them about teaching gardening skills, maintenance of the garden, connecting the garden to the curriculum, and creating a plan of action. Additionally, county agents learned about butterfly gardening. Participants received curriculum materials as well as some basic gardening supplies to help them start the garden. Veggie Bytes, a quarterly school garden newsletter, was developed and distributed.

Results
Among the teachers, nearly 60% indicated that they felt more confident about their ability to design, build and maintain a garden after the workshops. Sixty-six percent were more confident in their knowledge of when to plant certain vegetables. Nineteen new gardens were established at child care centers and ten new butterfly gardens were also established.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants

213 Weeds Affecting Plants

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
- Competing Programmatic Challenges

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Human Nutrition and Food--Adult & Childhood Obesity

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	0%		25%	
502	New and Improved Food Products	0%		20%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		10%	
701	Nutrient Composition of Food	0%		5%	
702	Requirements and Function of Nutrients and Other Food Components	0%		20%	
703	Nutrition Education and Behavior	50%		10%	
704	Nutrition and Hunger in the Population	0%		5%	
724	Healthy Lifestyle	50%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	16.0	0.0	12.3	0.0
Actual Paid Professional	31.1	0.0	3.8	0.0
Actual Volunteer	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**
795027	0	122608	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
795027	0	122608	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1197044	0	1282702	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Extension activities targeting adult audiences using curricula such as Smart Portions, Eat for the Health of It and Diabetes NEWS were conducted to promote the maintenance of a healthy lifestyle by eating well and being physically active. Research was conducted to study the relationship of food habits and choices of youth, including breakfast and snacking patterns, and feeding of infants as indicators of health/wellness in later adult life.

2. Brief description of the target audience

Louisiana adults, college-aged students and youth including those eligible for SNAP-ED or EFNEP programming.

3. How was eXtension used?

Resources provided through eXtension were used to enhance learning.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	65510	2705776	157524	0

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

Patent Applications Submitted

Year:	2013
Actual:	3

Patents listed
Vitamin E Conjugates and their Uses as Anioxidantsand Prodrug Delivery Vehicles
Palatable Foods for a Methionine Restricted Diet
A Natural Composition to Decrease Effects of a High Fat Diet

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	12	21	33

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	489402

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	402169

Output #3

Output Measure

- Number of individuals completing Smart Portions classes

Year	Actual
2013	788

Output #4

Output Measure

- Number of individuals completing Diabetes NEWS classes

Year	Actual

2013	130

Output #5

Output Measure

- Number of families completing Smart Choices classes

Year	Actual
2013	92238

Output #6

Output Measure

- Number of Master Nutrition Volunteers certified
  Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Number of students participating in Smart Bodies program

Year	Actual
2013	34837

Output #8

Output Measure

- Number of schools participating in Smart Bodies program

Year	Actual
2013	79

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. Outcome Measures

Participants adopt healthy lifestyle and weight management practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana residents suffer from chronic illnesses such as heart disease, stroke, cancer and diabetes at rates higher than the national average, while fruit and vegetable intake and physical activity is below the national average. Approximately 7% of adults have been diagnosed with diabetes and one in four adults is obese. There is an increasing rate of Type 2 diabetes being diagnosed in children and 27.1% of children are overweight or obese. Louisiana has the fourth highest cardiovascular death rate in the nation, accounting for almost 40% of all deaths in the state. Maintaining a healthy lifestyle by eating well and being physically active can be effective in reducing these figures.

What has been done
Smart Portions, a series of sessions that address nutrition, physical activity and eating habits for a healthy lifestyle was taught in conjunction with local hospitals and as a workplace wellness program. Diabetes NEWS (Nutrition Education Works) classes were provided to Louisiana adults with diabetes or to those who had a family member with diabetes. Classes on Eat for the Health of It, a Community Nutrition Education Program teaching the principles of eating based on the Dietary Guidelines for Americans, as well as money management and food safety were taught in EFNEP & SNAP-ED parishes. Smart Bodies, a comprehensive nutrition education and physical activity program designed to promote lifelong healthy eating patterns and physically active lifestyles to Louisiana's children and their families, was taught in 79 schools to 34,837 children.

Results
EFNEP clients were more likely to plan meals ahead of time, compare prices, use a grocery list, and make healthier food choices. Participants in the Smart Bodies program significantly increased their knowledge about the health benefits of eating fruits and vegetables and their interest in eating them. One-year follow-up measurements of height and weights showed the percentage of

students considered at risk or overweight remained the same among the Smart Bodies group of students, while other students in a control group showed slight increases. The Smart Bodies program appeared to equip the students with the knowledge and motivation necessary for them to adopt positive lifestyle behaviors.

Researchers studying nutrition of children found that breakfast and snacking patterns, including consumption of 100% fruit juice; apples; almonds, and oatmeal resulted in better diet quality and weight status. In 4th-6th graders at LA 4-H summer camps, boys were more willing than girls and whites more willing than non-whites to eat energy-dense foods. This finding will be used by nutrition educators in programs introducing new foods to children. The feeding of infants sets the stage for healthy beginnings; researchers discovered that diabetes during pregnancy has lasting consequences after pregnancy, decreasing some immune protective functions of breast milk.

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

Outcome #2

1. Outcome Measures

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

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Natural Resources & the Environment--Climate Change

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%		1%	
111	Conservation and Efficient Use of Water	5%		2%	
112	Watershed Protection and Management	20%		10%	
123	Management and Sustainability of Forest Resources	25%		17%	
124	Urban Forestry	5%		4%	
125	Agroforestry	0%		5%	
133	Pollution Prevention and Mitigation	10%		20%	
134	Outdoor Recreation	0%		1%	
135	Aquatic and Terrestrial Wildlife	10%		10%	
215	Biological Control of Pests Affecting Plants	0%		2%	
402	Engineering Systems and Equipment	0%		2%	
403	Waste Disposal, Recycling, and Reuse	10%		18%	
405	Drainage and Irrigation Systems and Facilities	0%		2%	
511	New and Improved Non-Food Products and Processes	0%		2%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	0%		1%	
604	Marketing and Distribution Practices	0%		1%	
605	Natural Resource and Environmental Economics	5%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	22.0	0.0	6.0	0.0

Actual Paid Professional	19.0	0.0	21.2	0.0
Actual Volunteer	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**
486077	0	684022	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
486077	0	684022	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
731869	0	5258150	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Louisiana is a state rich in water and other natural resources. Key programs in this area include:

- Louisiana Master Farmer
- Water resource management
- Nutrient management
- Native fisheries
- Forest management and wood processing
- Animal waste handling
- Wetland plants in fresh water and coastal environments
- Wildlife

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

Much effort was placed this year on determining the attitudes, opinions and beliefs of stakeholders regarding the effects of agricultural production practices on water quality in the Gulf of Mexico.

2. Brief description of the target audience

Louisiana farmers and livestock producers, coastal managers, wetlands stakeholders, commercial and recreational fishermen, hunters, forest land owners/managers and youth.

3. How was eXtension used?

A member of our natural resources team is a member of the Conservation Professional Training Community in eXtension, and some forestry extension articles have been propagated through eXtension.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	126870	4189937	19253	0

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

Patent Applications Submitted

Year: 2013

Actual: 5

Patents listed

Development of Bacteria-Lufenuron Combined Termite Bait
Oil-Water Separator
Engineering Plastic/Inorganic Fiber Blends as Lost Cirulation Materials
Floating Pitfall Trap
Control of Subterranean Termites

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	8	83	83

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	1208858

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	993709

Output #3

Output Measure

- Number of LaHouse Resource Center visitors
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of building professionals who participated in sustainable housing educational activities (seminars, tours, technical assistance)
  Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Number of consumer contacts in LaHouse sustainable housing and landscaping educational activities
  Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of farmers certified through the Louisiana Master Farmer program

Year	Actual
2013	31

Output #7

Output Measure

- Number of LaHouse Facebook followers (Likes)
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. **Outcome Measures**

Increased adoption of high performance building and retrofitting practices

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Reduce the impact of animal waste on the environment

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

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

2. **Associated Institution Types**

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Excess sediment and nutrients such as nitrogen and phosphorus continue to be a nationwide concern for water quality within the large watershed of the Mississippi-Atchafalaya River Basin (MARB) which drains 41% of the contiguous United States and parts of two Canadian Provinces to the Gulf of Mexico (GOM). Agricultural producers in Louisiana and upriver states are being challenged to develop strategies to address water quality issues and concerns.

What has been done

The Louisiana Master Farmer Program Partnership, led by the LSU AgCenter, continues to help producers voluntarily address the environmental concerns related to production agriculture. Over 2,500 farmers within Louisiana are enrolled in the three-phase training program that includes classroom and field training and development of a farm-specific management plan. Louisiana Master Farmer program participation covers 96% of the parishes in the state with the state's major agricultural and forestry areas demonstrating the most participation. The recently implemented Louisiana Master Farmer University combines the first two phases of the classroom and field training into a 2-day back-to-back event that aims to recruit additional farmers to its ranks and promote this environmental stewardship opportunity to farmers. The program addresses nonpoint source management by focusing on best management practices (BMPs) and conservation practices (CPs) to address runoff water quality in agriculture, forest, and urban settings.

Results

A survey was conducted in spring of 2013 to determine producers' perceptions of the relationship between on-farm production practices and water quality and to measure their adoption of recommended best practices. Results indicate that while 60% of respondents recognize the connection between practices on the farm and the quality of the water in basins downstream, nearly 1/3 are not convinced of that connection or have never thought about the connection. Over 40% of the respondents acknowledge that the benefits of implementing nutrient management best practices are clear and the resources are available to implement, while the remainder are uncertain. Among the most frequently-adopted recommended practices were: Using water control structures, techniques to improve grazing distribution, conservation tillage and pesticide drift reduction BMPS; following LSU AgCenter fertilizer recommendations; and practicing crop rotation. Over 1/2 of respondents did not have a farm-specific conservation plan or a grazing management plan and about 2/3 reported that they did not capture and reuse surface water for irrigation. It was concluded that opportunities remain for convincing farmers about the relationship between on-farm nutrient management practices and water quality benefits.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

Outcome #4

1. Outcome Measures

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

Not Reporting on this Outcome Measure

Outcome #5

1. **Outcome Measures**

Reduce coastal erosion through the establishment of viable wetland plants.

Not Reporting on this Outcome Measure

Outcome #6

1. **Outcome Measures**

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

Not Reporting on this Outcome Measure

Outcome #7

1. **Outcome Measures**

Landowners and managers adopt recommended practices for economic profitability and environmental sustainability.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

A survey on perceptions of nutrient management and adoption of environmental best management practices was compiled in spring of 2013. Its purpose was to determine producer's perceptions on the importance of environmental stewardship, determine the

current state of adoption of environmental best management practices and use this data as a base-line for planning future educational programs in this area. This survey was sent out to agricultural producers across Louisiana via email and personal contacts. Five hundred thirty eight (537) producers responded from forty eight (48) parishes). Respondents were located in all major watersheds. Survey results indicated:

-49% produced agronomic crops only
-30% produced livestock/pasture only
-21% produced both agronomic crops and livestock/pasture
-93% believed that farming practices definitely or possibly affected water quality
-43% believed that the benefits of nutrient management best management practices is clear
-49% believed that technical assistance for implementing best management practices is available
-49% believed that the cost of implementing best management practices is reasonable

The survey was quite extensive and covered many areas of resource conservation. Listed below are

the percentage of producers indicating that they have adopted certain key Best Management Practices:

Practices (% Adoption)

- Have a Farm-specific Conservation Plan (56%)
- Have a Grazing Management Plan (56%)
- Use pesticide drift reduction BMPs (85%)
- Use precision application technologies (57%)
- Follow LSU AgCenter fertilizer recommendations (86%)
- Soil test every three years (76%)
- Incorporate surface applied fertilizer or manures (62%)
- Use conservation tillage (87%)
- Contour farm on extreme slopes (32%)
- Have grassed turn rows and waterways (75%)
- Practice crop rotation (85%)
- Use water control structures (89%)
- Burn crop residue (48%)
- Disc crop residue (84%)
- Capture and reuse surface water for irrigation (36%)
- Use rotational grazing (79%)
- Analyze poultry litter prior to application (52%)
- Use techniques to improve grazing distribution (88%)

Ninety two percent (92%) of respondents indicated that they had used the LSU AgCenter as a source of technical assistance and production research support. Approximately 70% of respondents have participated in at least one federal conservation program and 37% have utilized Web-based sources of production/conservation information and 27% utilized printed resources. Results of this survey demonstrate that the Louisiana Master Farmer Program is effective in influencing producer conservation management decisions to reduce sediment and nutrient loss to improve water quality.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Resilient Communities and Economies

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
402	Engineering Systems and Equipment	0%		9%	
601	Economics of Agricultural Production and Farm Management	0%		8%	
602	Business Management, Finance, and Taxation	0%		10%	
607	Consumer Economics	0%		8%	
608	Community Resource Planning and Development	20%		0%	
721	Insects and Other Pests Affecting Humans	10%		24%	
722	Zoonotic Diseases and Parasites Affecting Humans	0%		4%	
723	Hazards to Human Health and Safety	10%		6%	
801	Individual and Family Resource Management	0%		7%	
802	Human Development and Family Well-Being	0%		5%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	50%		5%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	10%		4%	
805	Community Institutions, Health, and Social Services	0%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	3.8	0.0

Actual Paid Professional	13.7	0.0	3.8	0.0
Actual Volunteer	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**
349904	0	122608	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
349904	0	122608	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
526838	0	852325	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Resilient Communities and Economies initiative includes:

Economic Development--Agritourism, ecotourism, nature-based tourism, a program conducted state-wide to assist landowners in diversifying their income and complying with the 2008 limited liability agritourism law and Connect My LA, a program designed to create broadband awareness and increase use in an 18-parish region which includes the Delta region and Florida parishes.

Disaster Resilience - Place-based--Financial Disaster Resilience for Local Governments and agrosecurity planning; hurricane and nuclear exercises.

Disaster Resilience and Sustainability - People-based--Sustainable Housing / LaHouse Resource Center / Resilient Housing; disaster recovery and mitigation; National Flood Insurance Program

Risk Appreciation (Awareness, Avoidance and Data Enhancement)--Interactive, online hazard maps, building code education; sea level rise, subsidence and storm surge

The Extension Disaster Education Network (EDEN)

2. Brief description of the target audience

Target audiences for this initiative include families, elected officials, youth, emergency and floodplain managers, small business owners and governmental and non-governmental agencies.

- Agritourism focuses on agricultural landowners in the Delta and coastal areas. Landowners participating in nature-based or ecotourism are included in the agritourism category.
- Hurricane, storm surge, sea level rise and financial disaster resilience focus on the southern third of the state (hurricane prone region).
- Sustainable housing, flood mitigation, hazard mapping, community resilience and agrosecurity are statewide.
- Housing and risk awareness programs target building and hazard management industry professionals (and their associations); their clientele and youth.

• Agrosecurity engages producers, processors of food commodities and agribusiness.
• EDEN is a national network. Its primary audience is Extension educators in the 50 states, three territories and Bicol University (Philippines). EDEN targets consumers through its eXtension communities of practice for disaster issues.
• The flood risk awareness and mitigation programs have additional national audiences through service in the Association of State Floodplain Managers and Natural Hazard Mitigation Association (NHMA). NHMA is among the top referrers of traffic to the EDEN Web site.

3. How was eXtension used?

• The Home Energy content in eXtension is used for in-state housing programs.
• Links to eXtension materials are provided to clientele as educational materials in the Agritourism program.
• eXtension is used by EDEN to reach consumers nationally with information on Agrosecurity and Floods (the formal CoP) as well as emerging disaster issues (Avian Influenza, Drought).
• Louisiana contributed to eXtension in the areas of community and housing resilience, and provides leadership and input for EDEN's eXtension Flood CoP and the Home Energy CoP.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	46532	5936	349671	0

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

Patent Applications Submitted

Year:	2013
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	5	4	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	1763501

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	1532262

Output #3

Output Measure

- Number of LaHouse Resource Center visitors

Year	Actual
2013	3090

Output #4

Output Measure

- Number of building professionals who participated in sustainable housing educational activities (seminars, tours, technical assistance)

Year	Actual
2013	1080

Output #5

Output Measure

- Number of consumer contacts in LaHouse sustainable housing educational activities

Year	Actual
2013	2100

Output #6

Output Measure

- Number of LaHouse Facebook followers (Likes)

Year	Actual

2013	394

Output #7

Output Measure

- Number of states engaged in Southern Region Resilient Housing Campaign

Year	Actual
2013	11

Output #8

Output Measure

- Disaster Training and exercise participant-days (SCAP, Hurricane DRX)

Year	Actual
2013	63

Output #9

Output Measure

- Views of Louisiana flood maps on the LSU AgCenter portal

Year	Actual
2013	228816

Output #10

Output Measure

- Property owners and local officials assisted with site-specific flood risk determinations using the Louisiana FloodMaps Portal.

Year	Actual
2013	2675

Output #11

Output Measure

- Number of pesticide applicators initially certified, both commercial and private

Year	Actual
2013	1028

Output #12

Output Measure

- Number of pesticide applicators re-certified, both private and commercial

Year	Actual
2013	5280

Output #13

Output Measure

- Number of pesticide training sessions (including both private and commercial) monitored or conducted by LSU AgCenter faculty

Year	Actual
2013	136

Output #14

Output Measure

- Number of agro- and eco-tourism workshop participant-days

Year	Actual
2013	135

Output #15

Output Measure

- Number of Financial Disaster Resiliency local government presentation participants

Year	Actual
2013	325

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Entrepreneurs and community leaders gain knowledge of sustainable economic development strategies in relationship to operating an e-business, broadband connectivity, leadership and agritourism.
2	Individuals, local governments and communities use technology to enhance personal and business life.
3	Local governments seek understanding of threats from sea level rise combined with land subsidence. Indicator: Number of parish governments engaged in Sea Level Rise/Subsidence studies and data acquisition
4	Adoption of high performance building and retrofitting practices by consumers. Indicator: Percent of LaHouse visitors (who built, bought, developed plans or remodeled after participation) that adopted high-performance building or retrofit practices as a result of their educational experience.
5	Specification or recommendation of high performance building and retrofitting practices by professionals Indicator: Percent of professionals who adopted or recommended high performance building or retrofitting practices as a result of on their educational experience.
6	Southern region housing educators collaborate and share their resilient housing education experience, expertise and resources to enhance and extend resilient housing Extension programming and outreach.
7	Agricultural landowners gain knowledge of sustainable economic development strategies in agritourism.
8	The Cooperative Extension System uses the Extension Disaster Education Network (EDEN) to enhance disaster education programming. Indicator: Referrals to the EDEN Website by state Extension, USDA, and national network partner websites.
9	Flood map portal service is used routinely by clientele. Indicator: Percent of visits made by return visitors

Outcome #1

1. Outcome Measures

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

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Individuals, local governments and communities use technology to enhance personal and business life.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Access to reliable high-speed internet affects the ability of individuals and businesses in many ways. Gathering information, buying and selling products, banking, paying bills, and job searching make broadband connectivity a necessity for any entity desiring to function efficiently and with the most recent information. Research shows that rural communities, such as in the Louisiana Delta and Florida parishes often lag behind the national average for both broadband accessibility and adoption. More than 1/3 of rural Louisiana residents do not have internet at home and another 10% have only dial-up. The Connect My LA Rural Broadband Initiative was designed to educate residents, business owners and local government representatives and promote the economic and social importance of broadband adoption.

What has been done

Ten modules have been developed for this project: What is Broadband, Introduction to Online Business, Introduction to Selling Online, Introduction to Tablets, Introduction to Twitter, iNutrition-MyPlate, Louisiana Market Maker, and Using Social Media for Business and Personal Life, Intro to Using Social Media Videos, and Intermediate Social Media. During this reporting period, 59

classes and three broadband education summits which reached 660 individuals were conducted. In addition 22 computer kiosks have been installed in parish extension offices to allow public access to broadband technology for filtered browsing and personal document creation (i.e. Word, Excel and PowerPoint).

Results
In a recent evaluation of the CML program, 89% of the respondents reported they had learned something new about broadband technology and ways to use the Internet. Sixty-seven percent had already tried something new and 67% felt more confident about their ability to access and/or use Internet resources. Seventeen percent of respondents had begun managing their own Website since participating in CML classes and another 20% plan to create and manage their own Website within the next six months.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #3

1. Outcome Measures

Local governments seek understanding of threats from sea level rise combined with land subsidence. Indicator: Number of parish governments engaged in Sea Level Rise/Subsidence studies and data acquisition

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana communities are affected by flooding from rain, rising rivers and hurricane storm surge. Vulnerability increases as sea level rises, the ground subsides and coastal marshes disappear. Models used in managing threats through regulation, insurance and education too often rely on inadequate ground elevation data, particularly in areas where federal levees have subsided and non-federal levees have been built. Locals are aware of the inconsistency in flood impact model

outputs and thus question the viability of management systems based on their results.

What has been done
Extension specialists collected survey data for levees in five parishes. The LSU AgCenter also managed a "proof of concept" project that resulted in USGS collecting high resolution LIDAR data for levees using low-level flights. The data was provided to parish managers for future planning and resource evaluation. Surveyed levee elevation data and data extracted from the high resolution LIDAR data was provided to the LA Coastal Protection and Restoration Authority for new SLAMM modeling.

Results
The data and new mass-collection systems will have significant impacts on improving storm threat forecasts and pre/post management in coastal communities. These improvements will help build credibility for the tools and information created using the tools, which leads to more informed participation by residents and reduced community vulnerability.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #4

1. Outcome Measures

Adoption of high performance building and retrofitting practices by consumers. Indicator: Percent of LaHouse visitors (who built, bought, developed plans or remodeled after participation) that adopted high-performance building or retrofit practices as a result of their educational experience.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
High performance, sustainable housing addresses national, state and household needs for increased energy and water efficiency; environmental protection; disaster mitigation; human

health; household economic stability, and state and national economic recovery. Progress in this area depends on an educated public.

What has been done
Consumers continue to learn about sustainable housing through the ongoing tours and educational activities of LaHouse Resource Center. New feature signage and exhibits were created to enrich the self-guided tour experience and LaHouse was introduced to the tourism sector to extend its reach, via being featured by the Associated Press, meeting with Tourism Bureau, and participating in a statewide Tourism Summit. Additional LCES outreach included website (www.lsuagcenter.com/LaHouse); the social media platforms Facebook, Twitter, Instagram, Pinterest, and YouTube; publications distribution; and mass media. LaHouse Mobile, a traveling exhibit featuring both new construction and home improvement best practices, was completed and exhibited at eight public events in three states, and at LaHouse when not traveling.

Results
There have been 3090 visitors who utilized LaHouse Resource Center, LaHouse Mobile, and/or LaHouse resources. Out of that total, 2342 visitors came on-site for self-guided or scheduled tours, Extension group meetings or functions, and/or LaHouse events/seminars. Offsite visits, such as home shows and LaHouse Mobil events, reached 748.

Results of a follow-up survey of consumer audiences (who made housing changes or plans) found that as a result of what they learned from LaHouse tours or materials:
-46% of respondents adopted one or more wind, flood, termite-resilient housing best practices (8 of 10 practices were adopted by at least 20%; 5 practices were adopted by 40%);
-49% adopted one or more high energy-efficiency practices; and
-63% adopted one or more healthy indoor air quality practices.

Self-assessed knowledge ratings on a scale of 1 to 5 increased from a score of 2.6 before to 4.0 after the educational experience. Respondents shared what they had learned with an average of 60 other people.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

Specification or recommendation of high performance building and retrofitting practices by professionals Indicator: Percent of professionals who adopted or recommended high performance building or retrofitting practices as a result of on their educational experience.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
High performance, sustainable housing addresses needs for increased energy and water efficiency; environmental protection; disaster mitigation; human health; household economic stability, and state and national economic recovery. In order to respond to these needs and consumer demands, housing professionals must be knowledgeable on these topics.

What has been done
Thirty-three educational activities were conducted for housing-related professionals and college students, including CEU seminars, technical tours, and technical assistance to individuals. LaHouse and LaHouse Mobile were enhanced with new feature signage and exhibits. Website content, including the LaHouse Online Training Center with free video training, and publication distribution are ongoing.

Results
More than 1000 contractors, designers and college students learned regionally appropriate building best practices; 79 additional lead-certified contractors learned how to protect children and workers from lead poisoning; 26 contractors learned safe and effective mold control and remediation methods to restore healthy indoor conditions; 15 multi-family housing managers learned how to utilize integrated pest management to improve the healthy living conditions of hundreds of housing units.

Results of a follow-up survey of housing pro audiences found that as a result of what they learned in the educational tour or seminar:
-50% of respondents adopted one or more wind, flood, termite-resilient housing best practices (8 of 10 practices were adopted by at least 20%);
-30% adopted one or more high energy-efficiency practices; and
-30% adopted one or more healthy indoor air quality practices; and
-64% of the new lead certified contractors used lead safe work practices in an average of 8 homes and trained an average of 11 workers since the class.

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

Southern region housing educators collaborate and share their resilient housing education experience, expertise and resources to enhance and extend resilient housing Extension programming and outreach.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Although every region of the U.S. has experienced disasters, the Southeast Region is the most vulnerable to hurricanes which impact expansive areas and populations. This region contains the top three states that comprise 60% of all the nation's flood insurance policies. Louisiana leads the nation in flood insurance payouts. Southern states have suffered the greatest levels, by far, of property damage, economic impact, public cost and loss of life in the last 10 years from hurricanes, floods, tornadoes, and other natural hazards.

What has been done
A Southern Region Extension Resilient Housing Collaboration Meeting was held at LaHouse in April, 2013 involving 20 Extension faculty from 11 states who shared expertise and educational resources. Resilient housing publications and articles were added to EDEN and eXtension sites. Work began on regionalizing six Louisiana publications for use by the other states. LaHouse Mobile was hosted and exhibited at five educational events in Baton Rouge, La. and Houston, Galveston and Corpus Christi, Texas. As a result of this collaboration, extension specialists from 11 states have developed resilient housing educational program action plans.

Results
Professional development and resources shared will support a southern region educational campaign that stimulates adoption of resilient home improvement and building practices among homeowners and housing professionals, and thereby reduce damages, health hazards and economic loss from future natural hazards.

4. Associated Knowledge Areas

KA Code	Knowledge Area

402	Engineering Systems and Equipment
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #7

1. Outcome Measures

Agricultural landowners gain knowledge of sustainable economic development strategies in agritourism.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Agricultural landowners increased interest in agritourism after passage of the 2008 agritourism limited liability legislation. A 40% growth in outdoor-related recreation was reported in the 2012 U.S. Fish and Wildlife Survey. Agritourism includes outdoor recreation. The Outdoor Industry Association reports that Louisiana outdoor recreation generates $15.1 billion in consumer spending; $146,000 in direct Louisiana jobs; $4.6 billion in wages and salaries; and $1.1 billion in state and local tax revenue. The 2007 Agricultural Census reported that 170 Louisiana farms engaged in agritourism enterprises. Agritourism adds to the sustainability of the family farm and rural economies by inclusion in the tourism sector.

What has been done
Three educational workshops addressing revenue potential and best management practices in agritourism have been hosted around the state in partnership with Mississippi State University's Natural Resource Enterprises program, Louisiana Sea Grant and other privately owned businesses. The Miss-Lou Rural Tourism Association convenes an annual summit promoting the tourism cluster in parishes along the Mississippi and Louisiana borders. Information on how to start, grow or sustain agritourism ventures has been delivered by mail, e-mail, website, blog site, Twitter and Facebook. Approximately, $350,000 in grant dollars has been designated to develop an agritourism infrastructure in one of the poorest regions of Louisiana, the Delta.

Results
Participants attending workshops believed they could earn approximately $174,398.78 in additional income by implementing some of the enterprise development strategies on their properties based on information gained at the workshops resulting in an approximate aggregate

cash flow of $3,965,200. A group of individuals evolving from an LSU AgCenter agritourism led program in northeast Louisiana have formed a 12-parish corporation, "Louisiana Delta Adventures, Inc." to promote nature-based tourism. Their goal is to capitalize on the environmental, agricultural, social and cultural destinations within the region to bring new dollars into the region. Several new paddling and canoe trails have also been created in the Delta.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
608	Community Resource Planning and Development

Outcome #8

1. Outcome Measures

The Cooperative Extension System uses the Extension Disaster Education Network (EDEN) to enhance disaster education programming. Indicator: Referrals to the EDEN Website by state Extension, USDA, and national network partner websites.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	3295

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Disaster education, including food and agricultural defense, touches all Extension program areas but is not an identified USDA Extension program. The National Oceanic and Atmospheric Administration estimates that the 2012-2013 drought will rank number one in anticipated financial loss with respect to all disasters including previous droughts. In significant wide-ranging, long-term disasters such as the national drought, the emergence of the National Disaster Recovery Framework, and sweeping reform of the National Flood Insurance Program, to discontinue subsidized and grandfathered rates, collaboration and partnerships as practiced by EDEN are vitally important.

What has been done
The LSU AgCenter hosts, develops and maintains a public-facing EDEN website, authored through a password-protected content-management system. The affiliated EDEN virtual

workplace, features individual collaboration sites for program area work groups, leadership teams, and special project groups such as drought, flood, human and animal diseases and multi-state response to major disasters. EDEN's drought issue leadership team is integrated with the National Voluntary Organizations Active in Disasters Drought and Wildfire Taskforce, and collaborates to address the needs of farm operations, individuals and families, and communities as they respond to and recover from the drought. EDEN maintains information and advisory pages on a series of animal and animal-related human diseases. EDEN published drought task force's Community Capacity Building Program for Drought Response as well as comprehensive background information on the National Flood Insurance Program, the 2012 Reform Act and implications for property owners deciding to invest in buildings during hurricane recovery.

Results

With the national EDEN Website, www.EDEN.lsu.edu, linked to dozens of state-Extension Websites, EDEN information easily reaches millions across the U.S. Within the FY visitors entered EDEN's public site 52,351 times and viewed 122,835 pages. 12,006 of those entrances were through the home page. Almost 1700 were referrals from state Extension member websites and USDA; and 1600 from known partners. Significant direct entry points were for the following subject matters: NFIP and the 2012 NFIP Reform Act (6,930 entrances; 13% of entrances); the animal diseases BSE, CSF, PEDV and FMD (6,328; 12%); Mold (3,999; 8%), the human diseases H7N9, West Nile, and MERS (1,833; 3.5%); and Drought (1,419; 2.7%). Collaborative efforts supported by public and password protected sites resulted in EDEN accepting its first International member. EDEN is improving and reducing redundancy in Extension's disaster programming nationally, contributing to USDA's international program goals, and supporting a broad national interagency response to the multi-year drought and congressional reform of the national flood insurance program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
723	Hazards to Human Health and Safety
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #9

1. Outcome Measures

Flood map portal service is used routinely by clientele. Indicator: Percent of visits made by return visitors

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	61

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Building requirements at a specified geographic location depend on the risk of flood damage as defined in Flood Insurance Rate Maps (FIRMs). Flood maps are being updated; a procedural change in FEMA mapping has many Louisiana communities being mapped as though levees previously recognized as providing 100-year flood protection no longer exist (in the calculation of risk). FIRMs have taken on new significance with National Flood Insurance Program (NFIP) reform; which significantly raises the cost of flood insurance, and thus significantly impacts decisions to restore homes damaged in Hurricane Isaac and subsequent disasters. The LSU AgCenter's online, interactive mapping system allows consumers, local officials and industry professionals to determine their Flood Zone (from the FIRM) and understand vulnerability to floods and to flood insurance premium increases.

What has been done
In the wake of Hurricane Isaac, at FEMA's request, new Preliminary FIRMS for five southeast Louisiana parishes were added to the online mapping system. FEMA mandated that the standards set on these maps shall be used for federally funded flood mitigation. Popularity and importance of the site increased with the occurrence of Hurricane Isaac, implementation of the reform act, and issuance of new FIRMs. A new mobile-friendly interface was developed and interpretive applications added. Ten new-map open houses were supported, at which over 2500 residents received personal, hands-on assistance with determining flood risk at their site on the effective and proposed FIRMs. The program manager gave two workshop presentations, published an article in the La. Municipal Association newsletter, and developed EDEN web pages on NFIP Reform, which are referred to from the "Floodsmart in Louisiana" Website.

Results
Usage patterns show that the Flood Map Portal system is being used for routine flood zone determinations in support of real estate, mortgages, construction, and monitoring recovery and mitigation projects from Hurricanes Katrina, Rita, Gustav and Ike. A state recovery officer reported: "I'm with the Louisiana Road Home Program[an $11 Billion HUD-funded Katrina/Rita recovery program]. We here at Road Home (and other state-run programs) have been using the flood maps on your site for years to assist us in determining eligibility for Elevation Programs, as well as compliance with those programs. The maps are very user friendly and have helped us greatly. It's nearly impossible to look up all the different maps [we need] at the FEMA Map Center". The value of the service is indicated by the large number of map views (228,816) and the percent of views made by return visitors (61%).

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

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

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Sustainable Energy

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
131	Alternative Uses of Land	25%		5%	
402	Engineering Systems and Equipment	0%		43%	
403	Waste Disposal, Recycling, and Reuse	50%		5%	
404	Instrumentation and Control Systems	0%		9%	
511	New and Improved Non-Food Products and Processes	0%		35%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	25%		3%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	6.7	0.0
Actual Paid Professional	0.3	0.0	4.4	0.0
Actual Volunteer	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**
7679	0	141967	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
7679	0	141967	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
11562	0	986902	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research and extension efforts regarding biofuel development focused on using Louisiana-produced crops, crop residues, or agricultural byproducts to produce and utilize fuels such as ethanol, biodiesel, and other next generation alternative fuels. A USDA-AFRI funded project accelerated AgCenter goals as state-wide research and extension programs not only targeted Louisiana clientele but had a more regional impact.

2. Brief description of the target audience

Agricultural producers in Louisiana and southeast United States; consumers; renewable and natural resource energy production industries, LSU AgCenter faculty. The USDA-AFRI project has commercial partners, which has broadened the target audience from past years.

3. How was eXtension used?

Where appropriate, eXtension resources were used to enhance educational experiences, provide a source of reference information for problem-solving and identify research gaps. For the USDA-AFRI project, the AgCenter is cooperating in the development of a Bioenergy CoP.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	527	0	98	0

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

Patent Applications Submitted

Year: 2013

Actual: 2

Patents listed
Device for Degassing Liquids
Biomass Pyrolysis and bio-Oil Upgrading

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	3	9	12

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of agricultural producers providing biomass as feedstock for fuels
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of workshops conducted
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of Web page visits

Year	Actual
2013	91319

Output #4

Output Measure

- Number of Web page views

Year	Actual
2013	111523

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased knowledge regarding the use of agricultural feedstocks to generate biofuels.
2	Identification of crops and cropping systems capable of producing biomass.
3	Farmers, processors, potential feedstock producers and industry partners increase their knowledge regarding the use of agricultural feedstocks to generate biofuels.
4	Extension faculty and research scientists increase knowledge regarding feedstock generation and biofuel production

Outcome #1

1. **Outcome Measures**

Increased knowledge regarding the use of agricultural feedstocks to generate biofuels.

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Identification of crops and cropping systems capable of producing biomass.

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

Farmers, processors, potential feedstock producers and industry partners increase their 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	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The concepts for biofuel production in Louisiana are relatively new to most agricultural producers in Louisiana and the surrounding region. In order for this initiative to be successful, growers will need to understand and appreciate not only the importance of biofuel production to the country's future but also their role in providing agricultural feedstock for conversion into biofuels and chemicals

What has been done

An electronic survey was conducted to establish baseline data regarding the current levels of knowledge, attitudes and opinions of farmers, processors and potential feedstock producers regarding bioenergy production and processing in Louisiana. These data from this survey were combined with that of a similar previous mail-out survey to yielded input from 601 respondents representing 36 parishes and six of the state's key field crops: rice, sugarcane, soybeans, corn, forage, cotton and sweet potatoes. This information was shared at a recent Sustainable Bioproducts Initiative Summit and will be used to further develop educational programs and identify research needs to move this statewide initiative forward.

Results

Key findings of the study include the following: 75% of respondents believe that biomass used for energy production can help supplement the state's energy needs while 67% believed that agricultural biomass is a viable energy alternative to fossil fuels. Slightly over one-half of the respondents recognize that harvesting biomass does not negatively impact wildlife, water quality or soil quality. 86% indicated they would be willing to participate in management activities for biomass production such as short rotation crops and 62% indicated they would be willing to participate in a biomass to bioenergy market. The majority of respondents believe that tax credits, government subsidies, grants, secured loans and other incentives should be provided for this effort. There is a deficit in knowledge regarding actual practices such as labor, equipment and storage required for biomass production. Overall, there appears to be interest in producing feedstock for biofuel generation among Louisiana farmers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
131	Alternative Uses of Land
403	Waste Disposal, Recycling, and Reuse
511	New and Improved Non-Food Products and Processes

Outcome #4

1. Outcome Measures

Extension faculty and research scientists increase knowledge regarding feedstock generation and biofuel production

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual

2013 0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The technical hurdles that impair biofuel production in Louisiana include identifying feedstocks and range of production areas for year round delivery, creating tools for producers and processors to determine the value of these crops, developing processing technologies for biofuel production and evaluating supplemental high value products to improve the economics of biofuel production. Formation of a regional multidisciplinary consortium of agricultural scientists, biotechnologists, engineers, economists and educators through the USDA-AFRI project has facilitated the conversion of these regionally appropriate crops into a portfolio of bio-based fuels and chemicals.

What has been done

The Louisiana Institute for Biofuels and Bioprocessing (LIBBi) was created to foster collaboration on the conversion of agricultural feedstock into biofuels and chemicals. Most laboratory and pilot scale research on biofuels and biochemicals has been conducted by the Audubon Sugar Institute (ASI). The USDA-AFRI grant has now moved biofuels research, education, and extension efforts into several other AgCenter units. ASI has researched pretreatment options for multiple crop feedstocks.

Results

The joint efforts of LIBBi resulted in the procurement of NIFA AFRI-CAP funding for "A Regional Program for Production of Multiple Agricultural Feedstocks and Processing to Biofuels and Biobased Chemicals". The objectives of the grant are broad in scope. Breeding and crop production research was initiated at north Louisiana research stations to expand the range of energy cane variety selection and low-input sustainable crop production systems. Demonstration areas were planted at these northern locations to augment education efforts to a new clientele base. Modifications to existing pilot biorefinery facilities have been completed. The pilot plant will process multiple feedstock crops (energycane and sweet sorghum initially) and pursue cutting edge processing technologies to demonstrate conversion of monomeric sugars to butanol, gasoline, and isoprene. The AgCenter is also a participant in two Sun Grant projects that involve variety testing for energycane and sweet sorghum.

4. Associated Knowledge Areas

KA Code	Knowledge Area
131	Alternative Uses of Land
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
511	New and Improved Non-Food Products and Processes
512	Quality Maintenance in Storing and Marketing Non-Food Products

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Youth Development

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	90.0	0.0	0.3	0.0
Actual Paid Professional	107.7	0.0	0.0	0.0
Actual Volunteer	7700.0	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
2757254	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
2757254	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
4151499	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Louisiana 4-H Youth Development Program reaches 242,588 young people through hands-on educational programs in the mission mandates of Citizenship, Healthy Living and Science. Programs are

designed to promote positive youth development by supporting the four essential elements of belonging, independence, generosity and mastery.

Approximately 80% of these youth are reached through youth enrichment programs, camps, and afterschool programs while approximately 20% of youth are impacted by the 4-H Club program. These programming efforts are supported by over 7,700 youth and adult volunteers.

The focus for this year's 4-H youth development statewide evaluations was school gardens. The results of that study are described in the impact report below.

2. Brief description of the target audience

Louisiana 4-H Youth Development Program targets youth ages 9-19 as well as teen and adult volunteers residing in all 64 parishes.

3. How was eXtension used?

An eXtension Moodle platform was used for the following courses related to the Youth Development program in Louisiana. The number of students enrolled in each course and the number of course views are also provided.

- LA Camp Counselor Training - 254 students enrolled, 2828 views
- LA 4-H Going to Camp - 72 Students enrolled, 1266 views
- LA 4-H OMK Risk Management Training - 72 Students enrolled, 1739 views
- LA 4-H Risk Management Training - 321 students enrolled, 7393 views
- LA 4-H Youth Development and Volunteerism - 33 Students enrolled, 540 views
- LA 4-H Youth Development Programs - 29 students enrolled, 189 views
- LA 4-H Youth Energy Program - 7 students enrolled, 37 views
- National 4-H Headquarters Overnight Chaperone Training - 21 students enrolled, 464 views
- LSU AgCenter AgMagic - 16 students enrolled, 148 views

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	239399	619310	656970	1667852

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

Patent Applications Submitted

Year:	2013
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	29	1	30

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	2563484

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	2085711

Output #3

Output Measure

- Number of youth participating in service projects

Year	Actual
2013	40000

Output #4

Output Measure

- Number of hours of service performed by youth

Year	Actual
2013	107045

Output #5

Output Measure

- Number of teens serving on state leadership boards

Year	Actual
2013	0

Output #6

Output Measure

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

Year	Actual
2013	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Youth develop and strengthen skills which promote healthy living.
2	Increased scientific and technology literacy among Louisiana youth through hands-on scientific learning and discovery.
3	Youth are engaged as contributing citizens within their community.
4	Adults and youth gain knowledge and skills associated with personal, organizational and community leadership.
5	Youth will practice caring and respectful behaviors which lead to positive relationships.
6	Through sustained engagement in school gardens, youth will recognize garden uses, increase feelings of competence, and apply science principles in growing a garden.

Outcome #1

1. Outcome Measures

Youth develop and strengthen skills which promote healthy living.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

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

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Youth are engaged as contributing citizens within their community.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Over the past few decades, there has been a growing awareness of the civic/political domain as a context for adolescent and youth development. Youth are more likely to be civically active as adults if they have had opportunities during adolescence to work collaboratively with peers and adults, engage in their communities and discuss current events. Youths' sense of social incorporation is a psychological factor that is positively related to youth assuming social responsibility for others in their communities and for taking civic actions (e.g., voting and volunteering) in young adulthood. Youth engagement in meaningful civic projects is positively associated with their psychosocial well-being and mental health.

What has been done
Over 40,000 4-H members participated in community service and service-learning projects. Twenty-five parishes reported on 38 4-H service-learning projects focused on hunger, health, disaster relief, elderly, animals, military, literacy and environmental issues. Louisiana 4-H members embraced distracted driving as their state service focus for this year. Distracted Driving service projects varied including educational workshops, simulations, awareness campaigns, and pledge drives. For the second year, parishes across the state participated in the State 4-H Day of Service held on Dec. 7, 2013.

Results
As a result of community service and service-learning efforts over 11,396 people were reached. The economic value of the 107,045 service hours was nearly $2.4 million. In addition, as part of the service-learning projects, almost $60,000 was raised.

The state 4-H service focus of distracted driving reached more than 34,000 people. About 20,000 4-H members and 13,000 adults promoted the importance of avoiding distracted driving and its potential deadly consequences. Parishes, local 4-H clubs and 4-H members logged more than 1,250 hours of service for that cause.

Parishes reported conducting 32 Day of Service Projects benefiting more than 84,450 people. In total, about 2,100 youth gave a total of 587 hours of volunteer time on those projects.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Adults and youth gain knowledge and skills associated with personal, organizational and community leadership.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Youth will practice caring and respectful behaviors which lead to positive relationships.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Through sustained engagement in school gardens, youth will recognize garden uses, increase feelings of competence, and apply science principles in growing a garden.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Research from the fields of education and horticulture science indicates school gardens positively impact youth outcomes. A recent meta-analysis revealed the most common impacts of school gardens were on academic and social indicators (Williams & Dixon, 2013). Robust academic gains in science, math, and language arts were observed. Social impacts on areas like improved environmental attitudes, self-efficacy, and motivation were also demonstrated, though to a lesser degree. Additionally, school gardens build youths' skills in growing a garden and impact food accessibility both through the produce grown at the school and the opportunity to transfer learning to a home garden.

What has been done
The Louisiana 4-H Youth Development program, in cooperation with Extension horticulturists and Master Gardeners, provides support to school garden efforts through teacher training, youth programs, and grant funding for garden educational materials and supplies. An emphasis on the connection between garden activities and academic content has been a focus of the school gardens initiative. Teacher training has emphasized the integration of the experiential learning cycle into the traditional classroom setting, thus youth have experienced an integration of core academic content in a practical, real-world setting.

Results
A series of studies was conducted to determine how youth understand the term garden, what science principles are connected with youths' work in the garden, and their perceived competence in growing a garden. For the qualitative components, photographs, paragraphs and drawings were analyzed using thematic analysis tools. Results suggested that youth think about "garden" in terms of beauty, color, and longevity (i.e. how long it takes for a plant to grow from a seed to a large plant) and that they appreciate the value of the ecosystem (sun, soil, water) to the garden, recognized aspects of plant science by illustrating parts of the plant, illustrated an understanding

of garden organization through labeling and systematically laying out the garden, demonstrated knowledge of seasons in the garden, and comprehended that the garden was a social place through the representation of groups of people talking and working together. A retrospective survey of 292 youth in grades K-12 showed a statistically significant increase (t291=21.116, p<.001) in youths' confidence in their ability to grow a garden. The greatest increase in confidence was in planning a garden with 18.3% (n=54) of youth indicating they were very sure they could plan a garden at pretest and 68.0% (n=198) of youth signifying surety at post-test.

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
- 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)

Evaluation Results

See qualitative impact results section of this report.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Childhood Obesity

☐ Reporting on this Program

Reason for not reporting

Childhood obesity is now being reported under the Human Nutrition and Food planned program area.

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	20.0	0.0	0.5	0.0
Actual Paid Professional	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual Volunteer	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

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

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

V(D). Planned Program (Activity)

1. Brief description of the Activity

2. Brief description of the target audience

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	0

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	0

Output #3

Output Measure

- Number of youth who participate in Smart Bodies Program

Year	Actual
2013	0

Output #4

Output Measure

- Number of elementary school participating in Smart Bodies program

Year	Actual
2013	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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

Outcome #1

1. **Outcome Measures**

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

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Forestry and Forest Products

☐ Reporting on this Program

Reason for not reporting

Forestry and forest resources is now being reported under the Natural Resources and the Environment planned program area.

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	5.0	0.0	13.8	0.0
Actual Paid Professional	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual Volunteer	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

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

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

V(D). Planned Program (Activity)

1. Brief description of the Activity

2. Brief description of the target audience

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2013	0

Output #2

Output Measure

- Number of Web page visits

Year	Actual
2013	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Participants adopt recommended forestry practices.

Outcome #1

1. **Outcome Measures**

Participants adopt recommended forestry practices.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}