2015 Southern University and A&M College and Louisiana State University Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

The fiscal year 2015 report is a combined report of the LSU Agricultural Center (LSU AgCenter) and the Southern University Agricultural Research and Extension Center (SU AgCenter). The LSU AgCenter and the SU AgCenter integrate the functions of research and the Cooperative Extension Program to address NIFA Priority Science Areas, NIFA National Challenge Areas, and to address other pressing needs of Louisiana residents.

The mission of the LSU AgCenter and SU AgCenter is to enhance the quality of life for the people of Louisiana through statewide basic and applied 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. Together, the AgCenters disseminate information to the citizens of Louisiana in a manner that is useful in addressing their scientific, technological, social, economic and cultural needs.

The LSU AgCenter is one of 9 campuses in the LSU System. Headquartered in Baton Rouge, LA, the LSU AgCenter shares some physical facilities with the LSU A&M campus. LSU AgCenter continued during this year to do its part to implement the One LSU reorganization plan for the LSU System. As a part of that reorganization plan, the LSU AgCenter and the LSU College of Agriculture are now supervised by the Vice President for Agriculture, Dr. Bill Richardson who also serves as Dean of the College of Agriculture, Director of the Louisiana Cooperative Extension Service and Director of the Louisiana Agricultural Experiment Station.

The SU Ag Center is one of five campuses in the Southern University System. Headquartered in Baton Rouge, LA, the SU Ag Center shares some physical facilities with the main campus at Southern University and A&M College, Baton Rouge (SUBR). Due to severe budget reductions, our interim chancellor is also serving as the vice chancellor for research. Also, our Vice Chancellor for extension, Dr. Gina E. Eubanks is also serving in dual capacities at the SU Ag Center and also as the Program Leader for Family and consumer Sciences, Food & Nutrition Programs at the LSU Ag Center. This dual appointment has helped tremendously in enhancing the collaborative activities between the two Centers as we work to pool our limited resources to ensure maximum research and extension benefits for Louisiana citizens.

Both the LSU AgCenter and the SU AgCenter support the following main program areas--**Animal Sciences, Natural Resources, Plant and Soil Sciences, Food & Nutrition, and 4-H Youth Development**-- and Associate Vice Chancellors/Program Leaders provide oversight of programmatic efforts for both Extension and Research. This structure allows for coordinated and integrated programming across the organization. As of this date, the LSU AgCenter has faculty and staff located in 14 research and extension departments on campus, 17 research stations and 64 parish offices. The SU AgCenter has faculty and staff located in 34 of 64 parishes (counties). However, because of external grants and contracts the SU Ag Center has a presence in all 64 parishes of the state. In the LSU AgCenter, regional Directors in each of the five (5) geographic regions of the state administratively supervise faculty and staff

at the agricultural experiment stations and parish extension offices within their regions. Program leaders, regional directors and department heads in both AgCenters work together to lead faculty in developing focused programs to address the state's most critical needs.

In FY2015, approximately 16.33% of the LSU AgCenter's overall budget was provided by federal funds; 55.48% by state funds and 28.19% 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 23% since 2008 have significantly affected programs jointly funded with state and federal dollars. Reduced operating and travel budgets, coupled with a reduction of over 400 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 140 of the 400 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 be critically reviewed to assess impact and relevance to the LSU AgCenter's role, scope and mission. The operational business plan is being continuously revised to include measures to improve program efficiency and effectiveness. Throughout this process, some programs were consolidated or realigned while others were 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 public/private grants and local funds and dependence on trained volunteers have allowed the continued delivery of key programs that are considered to be the highest priority. Sustaining 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.

For the past eight years the SU AgCenter has also experienced severe budget reductions. State funding to the Center has been reduced by about 45 percent since 2008. This budget problem is projected to get worse in FY 2016 unless alternative sources of revenue for the state are approved. The big drop in oil prices is one main reason for this budget predicament. Loss of employees and the uncertainty of replacing them was one of the consequences of state budget reductions. Other effects were reduced funding for planned activities, travel, materials and supplies, which in turn negatively affected projected outcomes. Despite the loss of state and federal funds, the Center's faculty and staff applied for and received about eight external grants and contracts for about $2 million to conduct research and provide research-based educational information and services to residents throughout the state. In FY2015, about 46.4% of the SU Ag Center's operational budget was from federal appropriations and 53.6% by state funds. Further budget reductions in state funds will certainly impact on our ability to meet the federal matching requirements.

During FY2015, the LSU AgCenter and SU AgCenter directed research and extension education programs in 9 priority program areas:

Childhood Obesity focusing on increased consumption of fruits and vegetables, increasing time in physical activity and related adult nutrition issues;

Climate Change focusing on the state's forestry industry, wildlife conservation, wetland plants, water resources and waste management and their effects on the environment;

Family and Human Development focusing on issues affecting individuals and families;

Food Safety focusing on seafood, raw produce, agricultural and processed commodity- safety, certification programs and consumer food safety issues;

Global Food Security and Hunger focusing on increasing the sustainability and profitability of Louisiana's animal, aquaculture and plant systems and food accessibility, affordability and policy;

Horticulture focusing on consumer horticulture; landscape ornamentals and turf; and home, school and community gardens;

Resilient Communities and Economies place-based and people-based projects and programs focusing on economics and community development; disaster preparedness, mitigation and recovery; risk awareness; sustainable housing; agrosecurity; and agritourism;

Sustainable Energy focusing on feedstocks, alternative biofuels, and biomass processing; and

Youth Development focusing on citizenship, healthy living, and science literacy.

The LSU and SU AgCenters have continued to focus on more effectively evaluating and communicating the impacts of their program efforts to key stakeholders and engaging them in charting a path for the future of the AgCenters. The LSU and SU AgCenters follow a four-year plan to evaluate key programs with one-fourth of the programs evaluated each year. The impact reports contained within each program priority area of this report reflect the results of the most recent evaluations conducted in that area. To more effectively communicate LSU AgCenter and SU AgCenter efforts and impacts, Parish Profiles and Experiment Station Profiles are annually updated. These two-page documents are a snapshot of the parish or station that highlight major program impacts and identify emerging issues and LSU AgCenter and SU AgCenter plans to address those issues. Communicating the public value of both AgCenters' programs was also part of this process.

Research Project Summary

The LSU AgCenter and the SU AgCenter continue to serve stakeholders by coordinating research relevant to Louisiana agriculture. Research scientists were 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. Additionally, more faculty were involved in integrated projects to identify stakeholder needs which allows for 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. The Southern University Cooperative Extension Service maintained program delivery in 34 Louisiana 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 was 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. In total, the LSU AgCenter and SU AgCenter conducted over 22,000 educational group events such as classes, workshops, presentations, clubs and camps which resulted in over one million direct contacts with youth and nearly one million direct contacts with adults in the 9 program areas.

Local support continues to be a critical element in conducting quality programs at the parish level. In 2004, the LSU AgCenter set a goal 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 and now the amount of

local salary and benefits support for local agents and administrative support staff in parish LCES offices is approximately $3.3 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 $6.8 million to support local programing.

Over the past several years, increased emphasis has been placed on accountability and reporting. As a result, significant changes were 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. Many of the metrics contained in this report are obtained from Extension's on-line planning and reporting system, Dynamics. The FTEs reported in the Summary table below represent all professional FTEs regardless of funding source which is different from the actual number from the FY2015 POW.

As a special item of note, the reviewer of this report will see a significant disparity between the number of FTEs reported for the 1862 institution in FY 2015 and planned for FY 2015 for each planned program area. This is due to the fact that an error in projected FTE calculations was discovered last year by the financial office and this error is still being corrected in the FY2015 report to more accurately reflect the number of FTEs in each planned program area actually supported by federal dollars. The total amount of FTEs budgeted from all sources for this report period remains the same.

Summary

Although undergoing major changes and facing repeated economic challenges, the LSU AgCenter and SU AgCenter have 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: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	300.0	43.0	129.0	43.0
Actual	256.4	38.0	116.9	42.6

II. Merit Review Process

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

- Internal University Panel
- Combined External and Internal University Panel
- Expert Peer Review
- Other (Representative Stakeholders)

2. Brief Explanation

During the next five years rigorous reviews of all programs will be critical as both the 1862 and 1890 land grant institutions continue to make every effort to ensure business is being conducted in the most effective and efficient way possible. Strategies for conducting program reviews on a regular scheduled basis are

being identified and evaluated. Peer reviews for proposed research activities of individual scientists will continue according to NIFA guidelines. Review comments will be solicited from peer scientists and state extension specialists. The comments and a synthesis of recommendations will be provided to the originating scientists or team of faculty by the administration. State-level commodity groups meet at least annually, and research and extension faculty will continue to make presentations and receive comments/suggestions regarding future research and educational programming needs from these key groups. External extension advisory councils continue to validate outreach programs. Internal groups made up of multi-disciplinary faculty provide review and focusing of statewide research and extension efforts. Both institutions will conduct program reviews to assess program effectiveness and establish program priorities.

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.

Multiple methods are used to seek input from all stakeholders in a fair and impartial manner that allows all an equal voice. Input is sought from both traditional and nontraditional audiences and the advisory committee and commodity groups are the major vehicles through which stakeholders provide input. While some individuals are specifically sought out to provide input because of their role in the related program community, others are recruited using a variety of strategies. Public meetings are announced using tools such as email, newspaper, radio, Websites, Twitter, YouTube and blogs and stakeholders are encouraged to attend as they are able. Accommodations are provided for individuals with special needs. Surveys are conducted at many planned workshops or training sessions to determine the extent to which program activities conducted met and addressed the needs of participants. As an alternative, surveys are conducted to gather input from individuals who cannot attend meetings. Stakeholders are engaged in not only the planning, but also the implementation and evaluation of program efforts.

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.

Various methods are used to identify individuals and groups to have input into the programming process. One-on-one contact is an often-used method by which extension and research identify individuals and groups which have interest in guiding programming. Advisory committee members are a great help in identifying other stakeholders. The key is ensuring that individual stakeholders represent a common subset of the total target population so that the needs of all can be identified and considered. A concerted effort will be made to allow various individuals to participate in the process by rotating advisory committee members while maintaining equal representation of the target audience on the stakeholder committees.

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

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional 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.

Extension agents and program area specialists hold meetings regularly with various stakeholder groups to get their feedback regarding programs and activities. Meetings with non-traditional groups and individuals such as community leaders, parish officials, and other agency officials to seek input are also carried out both at the local and state levels. Formal and informal meetings are held. Faculty and staff participate in community activities where they can meet and interact with non-traditional groups and individuals throughout the state. With already-established relations with federal and state agencies, community groups, leaders, the faith community and individuals, both research and extension personnel will utilize available resources at their disposal to interact and obtain important inputs.

Input is collected from stakeholder groups and individuals through the advisory committee process for all key programs, through external focus groups on various issues and by using various needs assessments and surveys. Advisory committee meetings with traditional and non-traditional stakeholder groups continue to be used most frequently. Surveys of both traditional and non-traditional stakeholder groups are used to gather such input. Utilizing Web-based survey tools has become the method-of-choice to collect input from stakeholders who cannot always participate in meetings. Occasionally focus group meetings and meetings with key individuals in a community are used to garner input. The nominal group technique or some modified version thereof is typically used to identify and prioritize issues in advisory committee meetings.

3. A statement of how the input will be considered

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

Brief explanation.

The major means of utilizing stakeholder input is to assist faculty in identifying emerging issues and in evaluating ongoing programs. Stakeholder advisory groups help to redirect extension programs and research projects when necessary. Prioritization of issues needing attention is a major role of advisory committees. Input from the parish (county) level is often directed to one or more state level faculty for their consideration. Also, state-level advisory groups provide input directly to state specialists, and this information then goes back to the parish groups for their consideration. In the current economic climate, stakeholder input is also being used to redirect program resources from programs having less impact to those with greater impact or impact potential. While stakeholders are not typically included directly in the hiring process, their input is considered in identifying the need to fill key positions. Stakeholders are involved in an advisory capacity, frequently participate in the interview process and provide input to the position selection committees. Legislative and regulatory actions affecting the future of our stakeholders is an important variable in the process of planning for future program focus and prioritization of faculty positions.

Brief Explanation of what you learned from your Stakeholders

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

- Promoting healthy and productive families, youth and individuals, focusing specifically on childhood obesity and food safety
- Conserving and protecting the environment by addressing water quality issues
- Multiplying agricultural productivity and sustaining natural resources
- 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

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
5237348	1693156	3925854	2034206

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	4613384	1693156	4447548	2034206
Actual Matching	4613384	1693156	4447548	2034206
Actual All Other	16385700	0	23210967	35627
Total Actual Expended	25612468	3386312	32106063	4104039

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	208097	0	0	0

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

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%	0%	25%	0%
502	New and Improved Food Products	0%	0%	20%	0%
503	Quality Maintenance in Storing and Marketing Food Products	0%	0%	10%	0%
701	Nutrient Composition of Food	0%	10%	5%	10%
702	Requirements and Function of Nutrients and Other Food Components	0%	30%	20%	30%
703	Nutrition Education and Behavior	50%	10%	10%	10%
704	Nutrition and Hunger in the Population	0%	0%	5%	0%
724	Healthy Lifestyle	50%	50%	5%	50%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	31.0	5.0	4.0	5.0
Actual Paid	9.8	3.3	2.3	4.4
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**
496881	230535	87505	271874
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
496881	230530	87505	282727
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1764810	0	432781	4000

V(D). Planned Program (Activity)

1. Brief description of the Activity

The childhood obesity issue was addressed through a multi-disciplinary programming approach led by experts in nutrition, youth development, and school and community gardens.

• Smart Bodies is an innovative program of nutrition and physical activities that is integrated into core curriculum academics to promote child wellness. Smart Bodies consists of three components: Body Walk, the OrganWise Guys (OWG), and 2-Step in the Classroom. Body Walk students explored the brain, mouth, stomach, small intestines, heart, lungs, muscles, bones, and skin stopping at learning stations to participate in interactive activities focused on the effects that the food has on each organ.
Students participated in OWG classroom activities that helped them understand physiology and healthy behaviors through books, games, dolls and informational videos. Students involved in the grade-specific 2-Step in the Classroom program engaged in short bouts of physical activity integrated with academic lessons. Monthly themed parent newsletters that included tips for incorporating physical activity into family life and kid-friendly, low-cost recipes emphasizing fruits and vegetables were sent home with students involved in the program.

• The 4-H Healthy Living initiative emphasized increased fruit and vegetable consumption and increased minutes of physical activity through a variety of delivery modes including the school garden program, the summer camp nutrition educational track, food and fitness boards at the state and local levels, and special interest workshops and day camps.

• Youth gardening activities continued and youth participants benefited from learning new techniques about gardening, which helped youth achieve the following: increased nutritional awareness, increased leadership development skills and self-esteem among youth, and increased environmental stewardship. Those who participated in these activities were introduced to a variety of nutrition-related technology, gardening, and physical exercises. Volunteers were key to program success.

• SnapEd and EFNEP programs continue to be conducted across the state. The programs target low-income, high-risk communities with both individual and environmental-level programming. Adopting the national ecological systems programming model has led to an increased emphasis on building healthy communities.

2. Brief description of the target audience

The target audience for the Smart Bodies program included public and private elementary schools in Louisiana and their students in grades K-5 with emphasis on youth from limited income families. The program created public value by indirectly influencing the schools' administrators, faculty, parents and siblings of participant students. Parents received newsletters, while children were given Body Walk activity books, and the OrganWise Guys and 2-Step in the Classroom curricula were used by the classroom teacher. Parents had the opportunity to volunteer and participate in the Body Walk when it visited their child's school. The target audience for the 4-H Healthy Living program was youth in grades 4-12, parents, school administrators and faculty, and 4-H and Master Gardener volunteers. It was also necessary to train program staff and volunteers to ensure effective and efficient delivery of educational information. The target audience for the SnapEd and EFNEP audiences are low-income families and communities.

3. How was eXtension used?

eXtension was utilized to address childhood obesity through educating AgCenter paraprofessionals, newly hired professionals, Extension personnel in other states, and community organizations through the Eat Smart Online curriculum. The Eat Smart curriculum provides evidence based information to enhance technical knowledge for educational outreach. Healthy communities, nutrition and family community of practice are utilized for continuing education and professional development.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	78780	1577677	169167	0

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	2	31	33

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2015	430887

Output #2

Output Measure

- Number of Web page visits
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of youth who participate in Smart Bodies Program

Year	Actual
2015	25948

Output #4

Output Measure

- Number of elementary schools participating in Smart Bodies program

Year	Actual
2015	74

Output #5

Output Measure

- Number of educational program activities

Year	Actual
2015	8049

Output #6

Output Measure

- Number of educational contacts
  Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Number of published materials distributed

Year	Actual
2015	70

Output #8

Output Measure

- Number of research & extension outreach publications developed (in-house)

Year	Actual
2015	14

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Children practice healthy eating
2	Children engage in healthy levels of physical activity
3	Parents and caregivers learn the importance of healthy eating and physical activity.

Outcome #1

1. Outcome Measures

Children practice healthy eating

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to the United States Department of Agriculture's Economic Research Service (USDA ERS), SNAP benefits help alleviate poverty and food insecurity among participating households. However, like most Americans, the dietary patterns of SNAP families have room for improvement. Typically youth participants under-consume fruits, whole grains, and other healthful foods while consuming too many empty calories. ERS analysis found that to meet the current Dietary Guidelines, most Americans need to consume more fruit; vegetables; whole grains; seafood; and plant proteins, while cutting back on sodium, refined grains, and empty calories. Several studies have shown that SNAP participants tend to consume lower-quality diets. Both income and education are predictors of diet quality, with higher income and education levels equating with better diet quality.

What has been done
Project goals for Body Quest included: 1) Knowledge gain in identifying nutritional value of vegetables and 2) Increased preference for vegetables after taste-testing, use of age appropriate technological approaches. Third grade classes were recruited as treatment and control groups in 10 of the 37 SNAP-Ed designated parishes in Louisiana. Treatment and control groups were at different schools within the same parishes to avoid any influence from other classmates, teachers, school food service, etc. There were a limited number of schools in rural parishes. Therefore some treatment and control groups were in different cities or towns. Teachers and principals self-selected whether they would be treatment or control groups. Schools were aware of their assignments and permission slips were sent home to parents of 3rd graders in the participating classes. There were a total of 10 treatment groups and 5 control groups.

Results

A repeated measures design was used to collect data from Body Quest program participants (N = 262) using the evaluation instrument developed by Struempler and Parmer (2013). Several statistically significant changes ($p < .05$) in attitude and intentions were reported by program participants. Children's taste preferences for broccoli, cauliflower, and spinach were improved. Children reported an increased willingness to eat tomatoes and cauliflower in the future. Children also reported an increased intention to ask family members to purchase cauliflower for them to eat. For the knowledge assessment part of the evaluation, a pretest/posttest design was used (N = 321). The children who participated in the Body Quest program increased their knowledge of nutrition ($t320 = 8.48$; $p < .001$) from pretest (M = 57.5) to posttest (M = 68.7).

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Children engage in healthy levels of physical activity

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #3

1. Outcome Measures

Parents and caregivers learn the importance of healthy eating and physical activity.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

See Results Section of Qualitative Impact Statement

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Climate Change (Natural Resources & the Environment)

☑ 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	0%	0%	3%	0%
102	Soil, Plant, Water, Nutrient Relationships	50%	0%	5%	0%
103	Management of Saline and Sodic Soils and Salinity	0%	0%	1%	0%
111	Conservation and Efficient Use of Water	0%	0%	5%	0%
112	Watershed Protection and Management	10%	0%	5%	0%
123	Management and Sustainability of Forest Resources	20%	10%	6%	10%
124	Urban Forestry	0%	45%	0%	45%
132	Weather and Climate	0%	10%	0%	10%
133	Pollution Prevention and Mitigation	0%	10%	2%	10%
134	Outdoor Recreation	0%	5%	1%	5%
135	Aquatic and Terrestrial Wildlife	5%	0%	10%	0%
205	Plant Management Systems	15%	5%	19%	5%
215	Biological Control of Pests Affecting Plants	0%	0%	3%	0%
307	Animal Management Systems	0%	0%	25%	0%
403	Waste Disposal, Recycling, and Reuse	0%	15%	4%	15%
511	New and Improved Non-Food Products and Processes	0%	0%	1%	0%
604	Marketing and Distribution Practices	0%	0%	5%	0%
605	Natural Resource and Environmental Economics	0%	0%	5%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	20.0	3.0	25.0	6.0

Actual Paid	6.7	1.2	28.3	5.6
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**
338153	55007	1076695	193201
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
338153	74040	1076695	280697
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1201043	0	6528330	4000

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activities included extension outreach using group and individual methods and mass media; social media tools; research experiments; result demonstrations; and field days incorporating the latest technologies. The following activities/interventions were conducted:

- Communicated research results and other information with clients through extension personnel in the form of publications, conferences, workshops, field days, home/office visits, demonstrations and other educational resources.
- Identified and promoted the use of crop varieties and animal breeds with climate adaptive traits.
- Educated consumers about the effects of climate change on the state's natural resources and mitigation strategies.
- Ongoing research of the environmental benefits of urban forests, wetlands, carbon sequestration and the urban forest effects on air quality.
- Ongoing research and quantification of urban forest effects on UV exposure in relation to proper vegetation design.
- Assisted areas affected by past hurricanes and other natural disasters to rebuild their tree population.
- Collaborated, cooperated and partnered with local, state and federal agencies, institutions, groups, private organizations/associations in seeking and delivering services to citizens.
- Conducted both commercial and private pesticide applicator certification programs.
- Expanded the Louisiana Master Farmer Program with nutrient management as a focus area.
- Maintained the Coastal Plants program coordinated natural resource extension.
- Continued research activities by the Center for Natural Resource Economics and Policy (CNREP).

2. Brief description of the target audience

Target audiences were Louisiana farmers and livestock producers, coastal managers, wetlands stakeholders, commercial and recreational fishermen, hunters, forest land owners/ managers, community leaders/stakeholders, interested agencies and organizations and youth.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	107077	1538425	20782	0

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

Patent Applications Submitted

Year: 2015

Actual: 2

Patents listed

Thiol Acrylate Nanocomposite Foams

Thermoplastic Cellulosic Fiber Granules Useful as Infill Materials for Artificial Turf

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	15	126	141

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page visits

  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of Web page views

Year	Actual
2015	1191160

Output #3

Output Measure

- Number of farmers completing the educational phase of the Louisiana Master Farmer program

Year	Actual
2015	83

Output #4

Output Measure

- Number of private pesticide applicators receiving initial certification

Year	Actual
2015	448

Output #5

Output Measure

- Number of commercial pesticide applicators receiving initial certification

Year	Actual
2015	641

Output #6

Output Measure

- Number of private pesticide applicators recertified

Year	Actual
2015	2472

Output #7

Output Measure

- Number of commercial pesticide applicators recertified

Year	Actual
2015	3233

Output #8

Output Measure

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

Output #9

Output Measure

- Number of educational program activities

Year	Actual
2015	1090

Output #10

Output Measure

- Number of educational contacts
  Not reporting on this Output for this Annual Report

Output #11

Output Measure

- Number of published materials distributed
  Not reporting on this Output for this Annual Report

Output #12

Output Measure

- Number of research & extension outreach publications developed (in-house)

Year	Actual
2015	8

Output #13

Output Measure

- Number of tree care workers and arborists completing educational program for licensing

Year	Actual
2015	624

Output #14

Output Measure

- Number of logging industry individuals completing base certification educational phase

Year	Actual
2015	100

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Forest landowners adopt recommended practices for profitability and environmental sustainability
2	Adoption of recommended practices by farmers that lead to reduced non-point source pollution in Louisiana waterways.
3	Development of new knowledge and technologies

Outcome #1

1. Outcome Measures

Forest landowners adopt recommended practices for profitability and environmental sustainability

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	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
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
124	Urban Forestry
133	Pollution Prevention and Mitigation
134	Outdoor Recreation

205	Plant Management Systems
215	Biological Control of Pests Affecting Plants
403	Waste Disposal, Recycling, and Reuse
511	New and Improved Non-Food Products and Processes
604	Marketing and Distribution Practices
605	Natural Resource and Environmental Economics

Outcome #2

1. Outcome Measures

Adoption of recommended practices by farmers that lead to reduced non-point source pollution in Louisiana waterways.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Federal and state policies and research by land grant universities continue to emphasize nutrient stewardship as an opportunity for agricultural producers to minimize environmental and economic impairments of water quality deterioration. Although water quality protection policies such as the Clean Water Act are of considerable debate, most states have assumed responsibility for designing and implementing control measures to protect water quality. Central to such strategy is the identification of management practices currently adopted and those that need to be adopted, which would minimize runoff of nutrients and other contaminants to surface and groundwater sources. Several practices, often referred as Best Management Practices (BMPs) are evaluated and promoted by land-grant universities, environmental agencies, and conservation agencies to address nutrient management issues in agricultural production, Louisiana's Master Farmer program is a direct effort to promote adoption of BMPs in crop and livestock production in the state.

Statewide Nutrient Management and Conservation Practices Survey is administered through the

Master Farmer program. The objective of this survey is to gather information on the BMPs currently adopted within crop and/or animal production practice across the state. This information is used to then identify the potential educational opportunities within each parish to promote adoption of nutrient management practices that enhance water quality protection and economic outcomes. Recommended BMPs are intended to improve overall production while minimizing the impact on soil and water resources as well as reduce unreasonable economic burden on the producers.

What has been done

A statewide web-based survey was administered in 2015 across all 64 parishes in Louisiana. The survey was used to gather information on BMPs that improve water quality, soil conservation, and wildlife habitat improvement. The survey instrument was developed by a team of specialists and extension agents with expertise in crop production, livestock, poultry production, and nutrient-and-pesticide management. The current survey is part of an ongoing effort to identify management practices that are currently adopted on farms in Louisiana parishes and prioritize those parishes and regions that can have a significant role in achieving water quality improvement in the state. Parish extension agents with guidance from Louisiana Master-Farmer coordinators explained the purpose of the survey during producer meetings, irrigation workshops, monthly meetings of Soil and Water Conservation districts, Louisiana Association of Conservation Districts annual meeting, and master farmer trainings. Natural Resources Conservation Service has helped in passing the word out on the survey through their district offices. Approximately 500 farmers have been reached through phone calls, emails, and face-to-face interaction about the survey, typically considering that as a sample size.

Results

Currently, 87 surveys have been completed from start to finish; whereas, 43 have been partially completed. Majority of the respondents were commodity crop producers followed by livestock producers. The survey results will be assessed to identify number of farms at parish level that currently adopt recommended management practices. The survey results will provide a clear path for Master Farmer program and extension agents for training and educating farmers on management practices on a parish level that protect and enhance water quality. It is crucial for farmers to document BMPs on their farms, which is essential to evaluate the footprint (not necessarily bad) of production practices on water quality. In turn, such farm specific information is useful to develop policy goals for annual reduction in nutrient runoff, focusing on both economic and environmental consequences.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
133	Pollution Prevention and Mitigation
205	Plant Management Systems
403	Waste Disposal, Recycling, and Reuse

Outcome #3

1. Outcome Measures

Development of new knowledge and technologies

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	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
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
124	Urban Forestry
132	Weather and Climate
133	Pollution Prevention and Mitigation

135	Aquatic and Terrestrial Wildlife
215	Biological Control of Pests Affecting Plants
511	New and Improved Non-Food Products and Processes
605	Natural Resource and Environmental Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The Louisiana Master Farmer Program (LMFP)

The LMFP is a voluntary conservation management program for agricultural producers that began in 2001. The LMFP address the issue of nonpoint source pollution that has contributed to more than 340 segments of Louisiana's waterways being designated as "impaired", or having such issues as low dissolved oxygen, excess amounts of fecal bacteria, and nitrogen and phosphorous nutrient pollution. Production agriculture has been identified as an important contributor of nonpoint source pollution. The LMFP established collaborative partnerships between public interest groups and local public, state and federal agencies that recognized the benefit of working together to solve the complex statewide environmental, human health, and economic issues that result from fertilizer runoff from production agriculture. The LMFP achieves these goals through a three phase program structure that includes: Phase I, environmental classroom instruction; Phase II, field days to observe conservation BMPs; and Phase III, the development and implementation of a Resource Management Systems (RMS).

It necessary to evaluate how effective the collaboration of the LMFP partners has been at achieving the program's goals of increasing sustainable agriculture in Louisiana, and to fulfill the requirement of evaluation of LSU AgCenter's main programs every four years. A multiphase mixed method study was used to evaluate the LMFP, and included sequential qualitative data collection followed by quantitative data collection, "to support the development, adaptation, and evaluation" of the program's processes and operations. The data collection began with a qualitative structured group interview with the LMFP partners. The program partners were interviewed because majority had been involved in the program for at least seven years, a few partners themselves had also participated in the program and become certified Master Farmers, and they all had thorough knowledge and experience with

the three phases of the program. The quantitative data collection followed the development of the LMFP program partners' recommendations to further answer questions about the program's operations and processes. Quantitative survey data was collected from the certified Master Farmers who had completed the program as of spring 2015. The certified Master Farmers were determined to be the appropriate sample for this section of the data collection because of their direct experience with the program

The partners at the structured group interview stated that they were overall satisfied with the methods of operation of the LMFP and viewed it as an environmental stewardship program that has continued to progress forward to remain relevant to Louisiana's agricultural community. The partners thought that the LMFP has had strong and consistent producer participation over the life of the program because producers know that they can depend on this program for the knowledge and skills that are necessary to be in compliance with Louisiana's current soil and water conservation regulations. The responses to the survey questions for the two types of data collection methods were reviewed and were found to have low standard deviations from the mean. This indicated that there was a low variability of response between the producers who responded to the survey online and those that responded by mail. The other categorical variables that had a significant relationship were producers who have farmed in Louisiana for 25 years or more and that felt it was important to have additional assistance from the NRCS CPs in obtaining and preparing nutrient management information for the RMS plan. The program partners from the NRCS discussed the main issues that occur during the development and the implementation of the RMS plan in Phase III of the program in the qualitative interview. They indicated that during the development of the RMS plan the most important piece of information that the producers have to obtain is the nutrient management information for their farming operation to be able to move forward with implementation of the RMS plan and that this can be a difficult part of the process for producers. What it interesting is that it was the producers that had been farming in the state for 25 or more years that felt that this additional assistance was important to the process.

In 2015, 1936 new producers have participated in LMFP training with 608 (31.4%) new participants voluntarily joining the program and now are aware of how comply with soil and water regulations and protect the natural resources. Current participants (3,326) have the opportunity to attend many events each year which include on-farm viewing of implemented commodity-specific BMPs and conservation programs and presentations by producers, researchers and program partners. Participants in the LMFP have over 1.7 plus million acres that currently have some implemented BMPs and are participating in current Farm Bill conservation programs. In 2015, nineteen new LMFs were certified and 20 currently certified farmers in the program for 5 years or more were Re-Certified for an additional 5 years. They are now "presumed" to be in compliance with Louisiana's soil and water conservation requirements and are protecting all the natural resources, sustainable and addressing climate issues.

Certification began in 2006 with 13 producers, and has increased to 225 Certified LMF as of January 2016. These producers represent the poultry, sugarcane, soybean, corn, cotton, wheat, crawfish, rice, grain sorghum, cattle, and timber industries across Louisiana with LMF Certification issued by State Commissioner Mike Strain Louisiana Department of Agriculture and Forestry. In 2015 the LMFP was recognized as leading the nation in promoting the protection of the environment the natural resources and sustainability. (Ron Curry, EPA Region 6, published comments) "We encourage farmers and growers to take advantage of the LMFP and Best Management Practices workshops, called BMP for short, to

help us in our common goal to reduce pollution in streams throughout the state." The LMFP faculty participates in various educational opportunities across the state to promote awareness of the program, climate change, conservation·, and improved water quality. Sparta Aquifer Educational Outreach (over 3100 students) and participation in irrigation and soil health workshops, minority producer field days, prescribed burn trainings, boards and conferences, impact over 3000 producers.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Family and Human 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
724	Healthy Lifestyle	0%	10%	0%	10%
801	Individual and Family Resource Management	0%	40%	0%	40%
802	Human Development and Family Well-Being	0%	40%	0%	40%
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	0%	10%	0%	10%
	Total	0%	100%	0%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	5.0	0.0	2.0
Actual Paid	0.0	6.0	0.0	1.9
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**
0	228601	0	102618
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	258039	0	139500
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	2000

V(D). Planned Program (Activity)

1. Brief description of the Activity

The following activities/intervention were conducted during FY 2015:

1. Extension and Research faculty worked cooperatively to develop and disseminate research-based educational materials devoted to helping the family set goals and manage limited resources.
2. Community Volunteers (advisory committee, Community organizations, etc.) were organized to help disseminate information, increase awareness and implement programs.
3. Consumer curriculum designed the previous year to support objectives on financial planning and management was used in teaching.
4. A research project titled "Assessing and Expanding Financial Literacy Among Undergraduate Students" was developed and funded during the year.
5. We developed partnerships with financial institutions to utilize their expertise in financial and other transactions.
6. Research results and other information were communicated to Louisiana residents through extension personnel in the form of publications, workshops, home/office visits, demonstrations and other educational resources.
7. We collaborated with local and state agencies and private organizations in seeking and delivering services to citizens.
8. The following activities were ongoing: Nutrition Classes, Child Care Classes, Second Chance 2-Recover workshops, Parenting Workshops, Parish and home visits, Demonstrations, Training sessions for adults and children, etc.
9. In collaboration with the Nutrition and Health program at Southern University Ag Center, we promoted physical fitness & healthy lifestyle.
10. We conducted educational trainings on emergency preparedness to assist Louisiana residents prepare for emergencies such as hurricane, tornado, flood, fire, etc.

2. Brief description of the target audience

Louisiana has a large number of low income and limited resource families who reside in the target areas that the SU Ag Center serves. Most of these families live below the poverty level. They lack knowledge, information, and/or skills to utilize existing resources to improve their parenting and child care skills, family nurturing, financial literacy, learning, resource management, and quality of life. Children and adolescent who are placed at risk and those that are potentially at risk will benefit from the services provided by the planned program.

3. How was eXtension used?

The project director and project staff utilized information from eXtension to design and develop the curriculum that is being used for the extension projects.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	19868	30112	0	0

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational program activities

Year	Actual
2015	694

Output #2

Output Measure

- Number of educational contacts

Year	Actual
2015	49980

Output #3

Output Measure

- Number of published materials distributed

Year	Actual

2015	14567

Output #4

Output Measure

- Number of research & extension outreach publications developed (in-house)

Year	Actual
2015	49

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Clients increase knowledge/skills or gained awareness about Family and Human development issues
2	Clients change behavior, attitude or lifestyle

Outcome #1

1. Outcome Measures

Clients increase knowledge/skills or gained awareness about Family and Human development issues

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In Louisiana, the percent of children younger than age five was about 7. The number of children in under 18 years was 1,128,942 (or 25% in 2009) and 1,120,974 (or 24% in 2014) [US Census Bureau). Minority groups made up 38 percent of the overall population. Louisiana, like other states, saw shifting population from rural to urban areas and from a mostly white to greater ethnic and racial diversity. Trends in family structure included grandparents raising grandchildren, stepfamilies, single-parent families, a decreasing number of married couples with children, an increase in households who are separated and/or cohabiting, a divorce rate of 50 percent and increasing numbers of single adults living with unmarried partners. Parenting is difficult and most parents have received limited training to prepare them for guiding a child's growth and development. Problems were compounded by dysfunctional family relationships, limited economic resources, and inadequate social support and parenting education.

What has been done
SU Ag Center utilized NIFA Funds along with other external grants obtained by faculty to conduct research and extension projects which provided research-based education to Louisiana residents. Preparing Families for Future Health and Wealth Challenges project focused on families with unemployed or part-time employed bread winners ages 30-65; the prison pre-release/re-entry "Second Chance 2 Recover" and living interactive family provided education/information to inmates and the emergency preparedness and child care training focused on families and professionals. Altogether, 1,100 families, 420 inmates and 19,800 individuals were impacted. Along with classes, workshops and personal contacts the participants received valuable information and lessons to help improve their conditions. To implement our programs, we collaborated with state and local government agencies, the nutrition & health planned program and community leaders.

Results
- A curriculum was developed, tested and used with the following subject matter preservation of health and wellness; enhanced healthy lifestyles; caregiving skills and capabilities; and understanding of financial self-sufficiency.
- The 420 inmates who attended the workshops/training sessions gained knowledge and learned how to handle anger and stress and how to develop resumes.
- More than 90 percent of the participants actually completed their resumes which they said will benefit them with finding gainful employment once they are released from prison.
- About 90 percent indicated that they will avoid stress and anger because the lessons they learned had actually given them facts to consider and be grateful for.
- Participants in nutrition classes and emergency preparedness gained new knowledge on food safety, proper food preservation, hurricane safety tips, and healthy methods of feeding a baby.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #2

1. Outcome Measures

Clients change behavior, attitude or lifestyle

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	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
724	Healthy Lifestyle
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
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
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

The State's budget problems continued in 2015, for the past eight years Louisiana colleges have gone through severe budget reductions. State funding to the Southern University Ag Center has been reduced by about 45 percent since 2008. It is projected that budget problem may get worse in FY 2016 unless alternative sources of revenue for the state are approved. Delays in Federal budget approvals continued to be of concern because the actual budget data were not readily available for effective planning. Government priority changes and mid-year budget reductions caused the relocation of some program participants resulting in decline in number of residents impacted. Additionally, Louisiana rural population continued to lag behind other 1890 states which resulted in the SU Ag Center receiving less federal capacity funds. Louisiana is slowly recovering from previous natural disasters such as hurricanes (2005 and 2008), flood, and the 2010 oil spill which caused problems in the state and impacted outcomes.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

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%	10%	17%	10%
702	Requirements and Function of Nutrients and Other Food Components	0%	10%	0%	10%
703	Nutrition Education and Behavior	0%	20%	0%	20%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	90%	10%	29%	10%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	10%	20%	43%	20%
723	Hazards to Human Health and Safety	0%	0%	11%	0%
724	Healthy Lifestyle	0%	30%	0%	30%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	5.0	3.0	6.0
Actual Paid	0.9	3.2	6.3	5.8
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**
45711	202421	239688	271923
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
45711	221019	239688	387841
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
162355	0	1185443	4560

V(D). Planned Program (Activity)

1. Brief description of the Activity

Food safety-related issues were addressed through extension and research activities including result demonstrations, workshops, classes, certification programs, studies and effective use of a variety of media sources to address food safety-related issues. Programs reached producers, consumers, handlers and processors about strategies for keeping food safe. Specific certification trainings that were conducted included Sanitation Control Protocol (SCP), Seafood HACCP; Meat and Poultry HACCP; Vacuum Packaging HACCP, Better Process Control School (BPCS) and ServSafe.

Specifically, research and extension activities that were conducted during this reporting cycle include the following:

- Collaborated and conducted research on food safety prevalent foodborne diseases;
- Promoted use of food safety, safe school food nutrition curriculums; and health tips to ensure food safety during school activities;
- Created awareness and generated knowledge in Louisiana residents about safe food handling practices through workshops, classes, demonstrations, home/office visits, publications, fact sheets, newsletters, and research reports and by using Web and other social media tools;
- Collaborated, cooperated and partnered with local, state and federal agencies, institutions, groups, private organizations/associations in seeking and delivering food safety information to residents;
- An extension food safety specialist was hired. Her role includes building capacity to respond to clientele needs regarding food safety;
- Certification trainings that were conducted included Sanitation Control Protocol (SCP), Seafood HACCP; Meat and Poultry HACCP; Vacuum Packaging HACCP, Better Process Control School (BPCS) and ServSafe.
- Research and dissemination of research-based information on Pre and Post Harvesting (Animal and Plant) best practice techniques as recognized by FSMA was undertaken.

2. Brief description of the target audience

Growers, consumers, commercial seafood processors, children and food handlers including restaurateurs and food vendors were target audience of this planned program. There is a large number of low income and limited resource families in Louisiana. These families typically lack the knowledge, information, and skills to utilize existing resources to improve their diet and ensure food safety. Children, the elderly and individuals with various health limitations are particularly vulnerable to food borne illnesses.

Particular attention was focused on growers and food producers and processessors as the primary means of reducing the prevalance of food borne illnesses originating during the production, packing and processing phases.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	29170	352801	833	0

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

Patent Applications Submitted

Year: 2015
Actual: 1

Patents listed
Delivery of Bioactive, Nanoencapsulated Antioxidants

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	1	7	8

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of individuals certified through food safety programs

Year	Actual
2015	305

Output #2

Output Measure

- Number of educational program activities

Year	Actual
2015	717

Output #3

Output Measure

- Number of educational contacts
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of published materials distributed
  Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Number of research & extension outreach publications developed (in-house)

Year	Actual
2015	2

Output #6

Output Measure

- Number of Web page views

Year	Actual
2015	69476

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase adoption of recommended safe food handling practices at the individual, family, community, production, and supply system levels.
2	Increase number of viable technologies to improve food safety

Outcome #1

1. Outcome Measures

Increase adoption of recommended safe food handling practices at the individual, family, community, production, and supply system levels.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Food-related diseases affect tens of millions of people and kill thousands. Increasingly, fresh fruit and vegetable products have been implicated as the source for foodborne pathogens causing foodborne illnesses. Outbreaks due to Salmonella and E-Coli contamination were reported during the year. This has led to the development of recommendations for some commodity producers, that precautions be taken in the fields and during post-harvest processing and handling to prevent pathogen contamination. Some Louisiana environmental conditions provide great opportunities for food borne illnesses particularly the hot humid climate. As a way of life, Louisiana citizens participate in many outdoor events where foods are pre-cooked, kept for a longer period of time and served outside. Research indicates that handling food correctly can prevent 90 to 95% of food borne illnesses.

What has been done
Research scientists and extension personnel in the Nutrition and Health Program at the LSU and SU Ag Centers collaborated and worked with citizens of Louisiana to increase their understanding of the impacts of foodborne illnesses and the techniques of handling food safely. One goal was to provide specialized training to professional users and the other goal was to help citizens especially the elderly, low income, educationally disadvantaged and poor families enhance their skills in proper food selection, storage and preparation. We conducted the following trainings:

HACCP: Four trainings with 35 participants
ServeSafe: Six trainings with 109 participants
Good Agricultural Practices (GAP) trainings: Two trainings for 65 people

Important topics were covered, for example food safety regulations, seafood safety hazards, hazard analysis, critical control point (CCP) determination, food safety modernization Act (FSMA), etc. Participants were tested and certificates awarded after successful completion.

Results

One hundred percent of the 209 participants learned how to handle food safely to avoid contamination and how to ensure that food safety guidelines are adhered to while doing so. The successful rate for receiving certificate was been 90-95%. The outreach program evaluation on understanding the impacts of foodborne illnesses showed that 95% of the participants learned and have implemented improved food handling procedures I their organizations (including, university cafeteria, chocolate factory, restaurants (fast food and traditional), bakeries, hotels, hospitals, churches, and grocery stores, etc.). An assessment of knowledge was conducted in a randomly selected Better Process Control workshop. Pre and post measurements of knowledge were taken with 22 participants. Knowledge increased by 21.8% from pretest (M = 69.5) to posttest (M = 91.4), a statistically significant increase ($t = 5.078$; $df = 21$; $p < .001$).

4. Associated Knowledge Areas

KA Code	Knowledge Area
502	New and Improved Food Products
703	Nutrition Education and Behavior
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Increase number of viable technologies to improve food safety

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual

2015 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
502	New and Improved Food Products
702	Requirements and Function of Nutrients and Other Food Components
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 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

See Results Section of Qualitative Impact Statement

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

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
102	Soil, Plant, Water, Nutrient Relationships	0%	10%	17%	10%
135	Aquatic and Terrestrial Wildlife	5%	0%	6%	0%
204	Plant Product Quality and Utility (Preharvest)	5%	0%	9%	0%
205	Plant Management Systems	30%	20%	4%	20%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%	3%	0%
212	Pathogens and Nematodes Affecting Plants	0%	0%	4%	0%
213	Weeds Affecting Plants	5%	0%	3%	0%
216	Integrated Pest Management Systems	5%	0%	4%	0%
301	Reproductive Performance of Animals	0%	10%	1%	10%
302	Nutrient Utilization in Animals	0%	20%	3%	20%
303	Genetic Improvement of Animals	0%	0%	2%	0%
304	Animal Genome	0%	0%	1%	0%
305	Animal Physiological Processes	0%	0%	3%	0%
307	Animal Management Systems	20%	30%	2%	30%
308	Improved Animal Products (Before Harvest)	0%	0%	2%	0%
311	Animal Diseases	5%	0%	3%	0%
313	Internal Parasites in Animals	0%	5%	2%	5%
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	0%	0%	1%	0%
601	Economics of Agricultural Production and Farm Management	0%	5%	24%	5%
704	Nutrition and Hunger in the Population	20%	0%	6%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	60.0	8.0	73.0	18.0
Actual Paid	19.9	8.4	57.1	15.6
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**
1005821	327394	2172413	911828
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1005821	298995	2172413	690886
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
3572447	0	10755423	16087

V(D). Planned Program (Activity)

1. Brief description of the Activity

Global food security and hunger activities included research and extension programs directed towards row crop, fruit and vegetable production; and animal and aquaculture production. LSU AgCenter programs addressed yield, cultural practices, and pest management resulting in development of new varieties and integrated pest management strategies for Louisiana's major row crops. SU Ag Center continued to address immediate and long term needs of small and limited resource farmers. Specific activities conducted include:

1. Designed and conducted educational programs and research projects on animal and plant enterprises to address yield, cultural practices and pest management; new varieties; and animal health to producers and potential producers;
2. Conducted workshops, farm visits, livestock shows, demonstrations, field tours, grower meetings, and training sessions;
3. Maintained modernized facilities and worked to acquire additional land for research and extension programs;
4. Worked with internal and external communication channels as well as traditional and social media to disseminate important commodity production and food safety information to clients and stakeholders.
5. Educated limited resource audiences about the availability of safe and healthy food supplies offered through farmers markets, local grocery stores, and school and community gardens.
6. Collaborated, cooperated and partnered with local, state and federal agencies, institutions, groups, private organizations/associations.
7. Enhanced marketing opportunities in traditional and alternative outlets such as farmer's markets, community supported agriculture (CSA), and other outlets.

Teaching methods included group and individual methods; mass media; applied research studies; result demonstrations; and field days, which incorporated the latest technological advances and use of social media. Research outputs were measured through scientific presentations at field days, local and national meetings and publications.

2. Brief description of the target audience

The target audience for this program included approximately 6,000 growers with 2.8 million acres of land in production and related agribusinesses:

- Cotton--282 producers with 164,000 acres in production who produced 196 million pounds of cotton.
- Feed grains--1,700 producers with 495,000 acres in production who produced 81 million bushels of feed grains.
- Rice--1,040 producers with 449,000 acres in production who produced 3.4 billion pounds of rice.
- Soybeans--2,500 producers with 1.4 million acres in production who produced 80 million bushels of soybeans
- Sugarcane--450 producers with 412,000 acres in production who produced 1.5 million tons (2.9 billion pounds) of raw sugar and 88 million gallons of molasses.
- Sweet potatoes--45 producers with 8,500 acres in production who produced 4.1 million bushels of sweet potatoes.
- Wheat--440 producers with 150,000 acres in production who produced 10 million bushels of wheat.

It also included livestock and poultry producers, crawfish farmers and consumer groups related to enhancing the value of animal commodities.

The SU Ag Center specifically targeted small producers, limited resource producers, socially and economically disadvantaged individuals, the underrepresented, the underserved, women, and minorities. Others are youth 13 - 18 years, policy makers, community leaders/stakeholders, interested agencies and organizations.

3. How was eXtension used?

eXtension was utilized to address the national mandates of EFNEP and SNAP-Ed. to help reduce food insecurity among limited-resource audiences. Information was useful to provide approaches to assist families with methods to obtain access to food and maximizing their food resources.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	268628	2192085	50481	0

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

Patent Applications Submitted

Year:	2015
Actual:	6

Patents listed
Herbicide-Resistant Rice
Resistance to Acetohydroxyacid Synthase-Inhibiting Herbicides
Rice Cultivar Designated 'CL151'
Rice Cultivar Designated 'CL271'
Ceramides and Their Bioavailable Nanoparticulate Formulations for Cancer Chemotherapy
Bioactives Delivery with Polymeric Particles (nanoparticles)

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	64	227	291

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page visits
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of Web page views

Year	Actual
2015	3580325

Output #3

Output Measure

- Number of educational program activities.

Year	Actual
2015	2296

Output #4

Output Measure

- Number of educational contacts.
  Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Number of published materials distributed
  Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of research & extension outreach publications developed (in-house)

Year	Actual
2015	46

Output #7

Output Measure

- Number of field demonstrations

Year	Actual
2015	265

Output #8

Output Measure

- Number of grower field days

Year	Actual
2015	74

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased awareness, knowledge/skills or changed attitudes regarding recommended animal and animal production practices.
2	Enhanced capacity of a sustainable global food system including new/improved animals, technologies and management systems
3	Increased awareness, knowledge/skills or changed attitudes regarding recommended plant and plant production practices.
4	Enhanced capacity of a sustainable global food system including new/improved plant, technologies and management systems
5	Individuals in vulnerable populations have access to healthy, affordable foods.

Outcome #1

1. Outcome Measures

Increased awareness, knowledge/skills or changed attitudes regarding recommended animal and animal production practices.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	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
135	Aquatic and Terrestrial Wildlife
216	Integrated Pest Management Systems
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
304	Animal Genome
305	Animal Physiological Processes

307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases
313	Internal Parasites in Animals
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
601	Economics of Agricultural Production and Farm Management

Outcome #2

1. Outcome Measures

Enhanced capacity of a sustainable global food system including new/improved animals, technologies and management systems

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	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

135	Aquatic and Terrestrial Wildlife
216	Integrated Pest Management Systems
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
304	Animal Genome
305	Animal Physiological Processes
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases
313	Internal Parasites in Animals
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
601	Economics of Agricultural Production and Farm Management

Outcome #3

1. Outcome Measures

Increased awareness, knowledge/skills or changed attitudes regarding recommended plant and plant production practices.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Cotton is an economically important agricultural crop in Louisiana. In 2015, cotton was grown on approximately 110,000 acres by 259 producers. The number of acres and producers continues to decrease as cotton prices have waivered over the past seasons. Average lint yield in 2015 was 1063 pounds per acre on irrigated acres and 902 pounds per acre on non-irrigated acres, as compared to 1322 pounds irrigated and 1131 pounds non-irrigated in 2014. The gross farm value

of the state's cotton crop was $60 million for 2015, as compared to the $127.3 million in 2014. Factoring in cotton seed sales and value added contributions, the total value of the 2015 cotton crop was $98 million. The extension education program for cotton supports producers, agricultural consultants, and other industry professional in decision-making by providing timely research-based information.

What has been done

The cotton educational program uses a comprehensive, collaborative approach involving both extension and research faculty at the local and state levels. A primary goal of the program is to encourage the adoption of best management practices by producers and the recommendation of best management practices (BMP) by agricultural consultants. The cotton program is delivered through a variety of methods including, but not limited to, producer meetings, newsletters, field result demonstrations, electronic mail, social media, newspaper articles, and individual farm visits.

Results

A Qualtrics survey was distributed to a panel of Louisiana agricultural consultants. A total of 16 surveys were completed. Consultants indicated that they recommended the use of best management practices with over 90% recommending that producers make decisions about fertilizer rates based on soil test; however, slightly less than 60% of consultants recommended soil testing at least every three years. Crop rotation was a BMP that was recommended by more 85% of respondents. More than 75% recommended both planting cotton within the early April to early May time period and planting a minimum of two to three cotton varieties. More than 70% of consultants recommended using LSU AgCenter cotton testing data for making planting decisions.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #4

1. Outcome Measures

Enhanced capacity of a sustainable global food system including new/improved plant, technologies and management systems

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	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
102	Soil, Plant, Water, Nutrient Relationships
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #5

1. Outcome Measures

Individuals in vulnerable populations have access to healthy, affordable foods.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana ranks 6th in the rate of obesity in adults at 33.1 %, 4th for obesity of 10 to 17 year old children at 21%, and 11th for obesity among high school students at 13%. Data indicate 33.4% of men and 36% of women are obese. By race, 30.4% of white, 41.9% of black and 32.6% of Latino residents are obese. Over 21% of children ages 10 to 17 and over 13% of high school students are overweight. Rates from adult and youth populations are down slightly from previous years' data.

Louisiana is 6th in the nation for occurrence of diabetes at 11.6%, however down slightly from 2012 data. Alternatively, the rate of hypertension in adults is up slightly more than 39% earning Louisiana a rank of 4th in the nation for cases of hypertension. The number of heart diseases cases related to obesity was 274,300 in 2010 and predicted to rise to 1,222,533 individuals by 2013. Obesity related cancer cases number 69,400 in 2010 and predicted to increase to 170,092 by 2030.

Louisiana is among few states that do not place limits on competitive foods in schools, do not require chain restaurants and similar retail food establishments to list calorie content information for certain items on menus, and do not tax sugar-sweetened beverages.

What has been done
Nutrition education was targeted to SNAP and other low-income citizens in thirty-two Louisiana

parishes. Programs were provided for youth, adults, and seniors through series of classes, one-time events, and social marketing efforts. Research and evidence-based curricula were utilized to educate SNAP-Ed clients regarding a healthful diet and the benefits of physical activity. These programs we provided in collaboration with schools, churches, community organizations, senior centers, and other agencies. The objectives of these educational programs are to 1) provide relevant information and educate target audiences on the factors that cause obesity and the health hazards that may relate to obesity. Audience responses were collected to determine the impact these educational programs had on changes by audiences in their attitudes, intentions and behaviors toward healthier food and physical activity choices.

Results

A pretest/posttest design was used to collected data from participants in the general SnapEd program using an evaluation instrument developed by Cater (2013). The evaluation was based on the Theory of Planned behavior and assessed changes in attitudes, intentions, and behaviors. Children (N = 193), teen (N = 238), and adult (N = 53) program participants were included in the evaluation. Across all age groups of children, teens, and adults, participants reported a statistically significant increase in their belief that they could increase their vegetable consumption. Adult program participants reported a statistically significant increase in their efforts to eat healthier foods. Adults also reported a statistically significant, positive change in their behaviors when making healthy food choices. All of these results point to a slow shift in attitudes toward and intentions to make healthy food choices as well as healthy changes in food choice behaviors.

Results of the physical activity portion of the evaluation indicated that a statistically significant number of participants were planning to become more physically active. In behavior change models, the shift from no interest in physical activity to planning to become more physically active is an important first step in the process. Teen program participants had a statistically significant increase their recognition of the usefulness of physical activity to promote health. This change perceived usefulness of physical activity is a recognized crucial tipping point to behavior change.

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See Results Section of Qualitative Impact Statement

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 6

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%	0%	22%	0%
204	Plant Product Quality and Utility (Preharvest)	0%	0%	17%	0%
205	Plant Management Systems	85%	0%	35%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%	3%	0%
212	Pathogens and Nematodes Affecting Plants	5%	0%	9%	0%
213	Weeds Affecting Plants	5%	0%	3%	0%
405	Drainage and Irrigation Systems and Facilities	0%	0%	2%	0%
601	Economics of Agricultural Production and Farm Management	0%	0%	4%	0%
604	Marketing and Distribution Practices	0%	0%	5%	0%
	Total	100%	0%	100%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	0.0	15.0	0.0
Actual Paid	10.2	0.0	14.8	0.0
Actual Volunteer	36.0	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**
513258	0	563077	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
513258	0	563077	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1822977	0	2784849	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Key horticulture program areas addressed issues related to commercial vegetable, fruit, pecan and sweet potato production; home grounds; landscaping; home, community and school gardens and commercial ornamentals and turf. The Louisiana Master Gardener program provided trained volunteers to assist in addressing the growing needs of consumer horticulture audiences. Increased emphasis has been placed on school and community gardening efforts. The Louisiana Super Plants Program continued to be offered to local horticulture professionals.

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; commercial vegetable, fruit, nut and sweet potato producers; home gardeners; nursery industry professionals; athletic field managers; Louisiana Master Gardener Volunteers; K-12 schools with gardens and related agribusiness clientele.

3. How was eXtension used?

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

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	298918	11071226	13324	0

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

Patent Applications Submitted

Year:	2015
Actual:	1

Patents listed
Sweet Gum Fruit Extract as a Therapeutic Agent

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	16	35	51

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2015	2257058

Output #2

Output Measure

- Number of Web page visits
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of Louisiana Master Gardeners completing training series

Year	Actual
2015	285

Output #4

Output Measure

- Number of service hours contributed by all Louisiana Master Gardeners

Year	Actual
2015	75818

Output #5

Output Measure

- Number of Educational Publications (in-house)

Year	Actual
2015	22

Output #6

Output Measure

- Number of Educational Contacts Made by Master Gardener Volunteers

Year	Actual
2015	5876151

Output #7

Output Measure

- Number of educational program activities

Year	Actual
2015	2091

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Louisiana Master Gardener volunteers supplement the delivery of consumer horticulture program to clients.
2	Increased adoption of recommended practices by commercial horticulture professionals and producers
3	Increased adoption of recommended horticultural practices by urban farmers and home gardeners.

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	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 28 LMG training programs in 58 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 2015, 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; conducted 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 2015, the LMG Program trained 285 new volunteers which increased the active number of volunteers statewide to 2,662. LMG volunteers provided 75,818 hours of their time to Extension educational projects and made 5,876,151 contacts with residents in Louisiana, exposing them to research-based, consumer horticulture information. This volunteer service, equivalent to 36 full-time employees, increased the human capacity of Extension horticulture professionals by 24% and contributed an economic value of $1,821,248 to the state of Louisiana.

4. Associated Knowledge Areas

KA Code	Knowledge Area
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
213	Weeds Affecting Plants

Outcome #2

1. Outcome Measures

Increased adoption of recommended practices by commercial horticulture professionals and producers

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Increased adoption of recommended horticultural practices by urban farmers and home gardeners.

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

See Results Section of Qualitative Impact Statement

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 7

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%	0%	12%	0%
601	Economics of Agricultural Production and Farm Management	0%	10%	6%	10%
602	Business Management, Finance, and Taxation	0%	50%	14%	50%
607	Consumer Economics	0%	10%	6%	10%
608	Community Resource Planning and Development	20%	20%	0%	20%
610	Domestic Policy Analysis	0%	5%	0%	5%
721	Insects and Other Pests Affecting Humans	10%	0%	18%	0%
722	Zoonotic Diseases and Parasites Affecting Humans	0%	0%	4%	0%
723	Hazards to Human Health and Safety	10%	0%	8%	0%
801	Individual and Family Resource Management	0%	0%	7%	0%
802	Human Development and Family Well-Being	0%	0%	5%	0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	50%	0%	5%	0%
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	10%	0%	5%	0%
805	Community Institutions and Social Services	0%	0%	10%	0%
903	Communication, Education, and Information Delivery	0%	5%	0%	5%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	13.0	8.0	4.0	1.0
Actual Paid	5.0	8.0	2.3	2.2
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**
250150	245584	87505	56250
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
250150	229763	87505	52250
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
888478	0	432781	1000

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Resilient Communities and Economies initiative included activities in the following areas:

Economic Development

- Planning, market assessment, management, and marketing strategies for established businesses.
- Strategic planning for community leaders and residents in the targeted areas
- Provided assistance to existing organizations to strengthen links between businesses, community based organizations and outreach education.
- Assisted established businesses with planning, market assessment, management, and marketing strategies
- Assisted local farmers and other producers to develop alternative enterprise initiatives for rural businesses. Encourage the development of agribusinesses to include utilization of niche markets (vegetables, organic products pasture-raised poultry and beef, etc.) for agricultural producers.
- Grant writing workshops were conducted to empower individuals, businesses and communities to enhance their skills on how to write for and obtain successful grants.
- Conducted a procurement conference for business owners and potention business owners in collaboration with local, state and federal agencies.
- Coalition meetings to build and enhance business development and expansion were held.
- Provided education and training for low skilled individuals to prepare them for the job market.

Disaster Resilience - Place-based

- Conducted Financial Disaster Resilience for Local Governments, a program involving studies of financial capacity of local governments to meet disaster recovery obligations and educational programs to improve capacity

• Provided support to Agrosecurity Planning and Hurricane and Nuclear Exercises, separate initiatives designed to protect Louisiana's agriculture from natural and technological hazards, including hurricanes, terrorism and accidental releases from nuclear power plants

Disaster Resilience and Sustainability - People-based

• Provided sustainable Housing programs at LaHouse, a program that educates homeowners and building industry professionals about building hazard-resistant, resource-efficient, healthy homes.
• Continued to focus on Disaster Recovery and Mitigation. This program area reached across the many disciplines of Cooperative Extension to put relevant information in the hands of citizens for disaster recovery and to reduce vulnerability to the hazards.

Risk Appreciation (Awareness, Avoidance and Data Enhancement)

• Continued the design and upkeep of interactive, online hazard maps, building code education, a program that provides same-page building-site information to the property owner, builder, and regulatory agencies
• Offered Sea Level Rise, Subsidence and Storm Surge, programs that included storm surge and flood modeling that reflected projected conditions (sea level rise and subsidence), while also detecting inaccuracies in the modeling data and obtaining better data to fill the gaps.

The Extension Disaster Education Network (EDEN)

The LSU AgCenter provides network support (Intranet and Internet) for EDEN. This network links Cooperative and Sea Grant Extension educators from across the U.S. and various disciplines, from food safety to field safety, from physical to psychological, and from government to community development. EDEN enables resource sharing and produces materials, workshops and community planning resources to help its members reduce the impact of disasters in their states and communities.

Community Development

The SU Ag Center continued to develop community leaders through the BOLD program. Building Opportunities through Leaders Development (BOLD) is program designed to develop teams of emerging leaders in rural and underserved communities throughout Louisiana. The program focused on providing community leaders with the tools to enhance their personal decision making, strategic planning and the use of modern and emerging technology.

2. Brief description of the target audience

Target audiences for this initiative were: general public, elected officials, youth, emergency and floodplain managers, small business owners & governmental and non-governmental agencies.

• 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 of food commodities and agribusiness.
• EDEN is a national network. Its primary audience is Extension educators in the 50 states and three

territories. It targets consumers through its eXtension disaster issues communities of practice.

• The flood risk awareness and mitigation programs also have a national audience through service in the Association of State Floodplain Managers and Natural Hazard Mitigation Association.

• BOLD program targeted rural leaders especially the underserved and underrepresented.

3. How was eXtension used?

• Contributed content (articles and FAQs) in the Home Energy and Flood eXtension resource areas, as well as other resilient housing and storm damage restoration content. State specialist serves as a national team leader in the Home Energy CoP and has presented and helped arrange webinars for Extension educators. eXtension Home Energy is promoted as an educational resource to our audiences, via posters and bookmarks at LaHouse.

• Links to eXtension marterials are provided to Agritourism program clientele.

• Provide leadership and input for EDEN's eXtension Flood CoP.

• Agrosecurity and Floods information is shared nationally with consumers as part of EDEN.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	45234	467793	13081	0

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	2	5	7

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

● Number of Web page views

Year	Actual
2015	1686807

Output #2

Output Measure

- Number of Web page visits
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of LaHouse Resource Center visitors

Year	Actual
2015	2047

Output #4

Output Measure

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

Year	Actual
2015	1091

Output #5

Output Measure

- Number of consumer contacts in LaHouse sustainable housing and landscaping educational activities

Year	Actual
2015	1111

Output #6

Output Measure

- Number of LaHouse Facebook followers (Likes)

Year	Actual
2015	552

Output #7

Output Measure

- Number of research & extension outreach publications developed (in-house)

Year	Actual

2015	2

Output #8

Output Measure

- Number of educational program activities

Year	Actual
2015	1075

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Individuals, entrepreneurs and community leaders gain knowledge of sustainable strategies for economic growth.
2	Individuals, families, small businesses and agricultural producers gain knowledge of the threat of disasters, how to prepare themselves and their property to minimize damage, recover from disaster impacts, and rebuild hazard-resistant homes.
3	Adoption of high performance building and retrofitting practices by consumers. Indicator: Number of active consumers engaged in building or remodeling who adopted an average number of practices
4	Specification or recommendation of high performance building and retrofitting practices by professionals. Indicator: Number of professionals who specified or recommended an average number of practices.

Outcome #1

1. Outcome Measures

Individuals, entrepreneurs and community leaders gain knowledge of sustainable strategies for economic growth.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The 2005 hurricanes prompted the state, encouraged by property insurers, to adopt a statewide residential building code tying building to flood- and wind-resistance criteria. All 400 jurisdictions are subject to the building code; 338 have their fortunes tied to Flood Insurance Rate Maps (FIRMs) of the National Flood Insurance Program (NFIP). The state's better-building initiative collided with FEMA's requirement for levees to be re-certified before being recognized on updated FIRMs. The fallout from failure to validate levees, coupled with Congressional moves to eliminate long-standing flood insurance premium subsidies, left a third of Louisiana's parishes having revised FIRMs they can't adopt, and people without reasonable access to their true flood risk. Being mapped "in the flood zone" has enormous impact on property value, home equity, building, mortgages, and insurance. Consumers desperately need access to current and future FIRMs when making property investment decisions.

What has been done
The LSU AgCenter created a FloodMaps Portal, putting FIRMs for the entire state on the Internet, providing point-specific risk information in the context of insurance and building permit requirements. The Portal is a focal point for outreach activities on hazard awareness and mitigation and gives property owners, investors, lenders, builders and building officials same-page access to the flood and wind vulnerability-reducing design standards of building codes. Risk information is presented with ground elevation data, contact information for local officials, and community-provided notes relevant to the user's point of interest. Users locate property by reference to road maps and aerial photographs or by searching for an address or geographic coordinates. In the last seven months of FY 2015, information was provided for 494,000 user-selected points. The service supported 16,000 mapping sessions per month in FY 2015, and provided a platform for presentations, one-on-one consultations and Open Houses offered by newly mapped communities. Half of the mapping sessions begin on www.LSUAgCenter.com; half

begin directly on the maps application. Outreach includes staffed computer stations at AgCenter and local government events, fairs and home shows. User-ship grew to 396,000 page views in FFY2015 (vs 276,000 in FY 2014), with a high percentage of return visitors (62%).

Results

Floodplain officials have rated the service 8.7/10 for technical accuracy and 9.2/10 for ease of use. Usage patterns and correspondence suggest that the Portal is used routinely for flood zone determinations in support of real estate activities, mortgages, and regulating construction, and in monitoring federally funded mitigation projects. Floodplain Officials and Realtors evaluated the FloodMaps site/service. Survey Results - Realtors in SE Louisiana: ? Overall interest in the site is high (M = 2.76 on a scale of 1-3), with highest interest being in flood insurance requirements and least interest in estimating depth of the 100-year flood. It is somewhat easier to find information about the community, map changes, flood insurance and building requirements with the LSU AgCenter FloodMaps Portal (M = 1.47) than without the portal (M = 1.04). The difference is statistically significant ($p < 0.001$) in a 2-tailed T-Test. On measures of value of the Flood Maps portal service in conducting real estate business, Realtors indicated (M = 3.36 on a scale of 1-4) that the site helps them provide better service to clients, saves them time, makes their jobs easier, and influences their clients? purchasing decisions. Survey Results - Floodplain Officials Statewide: When indicating the value of capabilities afforded by the FloodMaps Portal service for their own use and for use by constituents through the free Internet access, the value of was high slightly higher for features made available to constituents (M=3.62 on a scale of 1-4), that for features made available to the officials themselves (M=3.28). On measures of value of the FloodMaps portal service in conducting the duties of a floodplain administrator, officials indicated (M = 3.25 on a scale of 1-4) that the site helps them provide better service to clients, saves them time, makes their job easier, and influences clients? building decisions.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation
608	Community Resource Planning and Development
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

Outcome #2

1. Outcome Measures

Individuals, families, small businesses and agricultural producers gain knowledge of the threat of disasters, how to prepare themselves and their property to minimize damage, recover from disaster impacts, and rebuild hazard-resistant homes.

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

Adoption of high performance building and retrofitting practices by consumers. Indicator: Number of active consumers engaged in building or remodeling who adopted an average number of practices

Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

Specification or recommendation of high performance building and retrofitting practices by professionals. Indicator: Number of professionals who specified or recommended an average number of 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

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See Results Section of Qualitative Impact Statement

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 8

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
123	Management and Sustainability of Forest Resources	0%	10%	0%	10%
131	Alternative Uses of Land	25%	10%	5%	10%
402	Engineering Systems and Equipment	0%	0%	43%	0%
403	Waste Disposal, Recycling, and Reuse	50%	60%	5%	60%
404	Instrumentation and Control Systems	0%	0%	6%	0%
511	New and Improved Non-Food Products and Processes	0%	10%	33%	10%
512	Quality Maintenance in Storing and Marketing Non-Food Products	25%	10%	8%	10%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	1.0	5.0	4.0
Actual Paid	0.1	1.6	5.8	3.9
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**
3779	75260	220665	226512
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
3779	77179	220665	200305
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
13423	0	1091360	3980

V(D). Planned Program (Activity)

1. Brief description of the Activity

1. Research and extension efforts including workshops, demonstrations, field days, conferences, classes and individual interventions regarding biofuel development focused on using Louisiana-produced crops and/or crop residues to produce and utilize fuels such as ethanol, biodiesel, and other next generation alternative fuels were conducted.
2. Worked with existing organizations to strengthen links between businesses, community based organizations and outreach education.
3. Assisted local farmers and land owners/users to develop alternative enterprise initiatives for rural businesses.
4. Empowered community leaders and residents in the targeted areas to develop strategic plans for optimum utilization of natural resources.
5. Communicated and disseminated research findings about sustainable energy to consumers through extension personnel in the form of publications, conferences, workshops, field days, home/office visits, demonstrations and other educational resources.
6. Organized grant writing workshops to empower individuals, businesses and communities enhance their skills on how to write for successful grants.
7. Collaborated, cooperated and partnered with local, state and federal agencies, institutions, groups, private organizations/associations in seeking and delivering services to citizens.
8. Encouraged community organizations and resident involvement in developing plans for sustainable energy. Provide community leaders with advice and recommendations regarding best practices in community economic development programs for their communities.

2. Brief description of the target audience

The target audience for this program were agricultural producers in Louisiana and southeast United States; consumers; renewable and natural resource energy production industries; and LSU AgCenter faculty. The SU AgCenter component of this program will target rural and urban dwellers, under-represented, underserved, socially and economically disadvantaged groups in traditionally agricultural and urban communities in the State for the purpose of encouraging and educating them on the need for, and the benefits of sustainable energy.

3. How was eXtension used?

Through the efforts of the USDA-AFRI Biofuels grant, we provided information to eXtension for the production of high fiber sugarcane (energycane) and sweet sorghum. This information resides in the "Feedstocks for Biofuel Production" within the topic "Farm Energy: Feedstocks and Energy Crops".

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	12878	33337	76	0

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

Patent Applications Submitted

Year: 2015

Actual: 1

Patents listed

Device for Degassing Liquids

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	3	23	26

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of agricultural producers providing biomass as feedstock for fuels

Year	Actual
2015	25

Output #2

Output Measure

- Number of Web page views

Year	Actual

2015	208213

Output #3

Output Measure

- Number of Web page visits
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of educational program activities

Year	Actual
2015	51

Output #5

Output Measure

- Number of educational contacts
  Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of published materials distributed
  Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Number of research & extension outreach publications developed (in-house)

Year	Actual
2015	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased knowledge and understanding of the biofuels supply chain
2	Implementation of sustainable biofuels systems

Outcome #1

1. Outcome Measures

Increased knowledge and understanding of the biofuels supply chain

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
For many, exposure to sustainable biofuels/bioenergy principles has been media driven with limited relevant science. Demand for biomass feedstocks continues to increase as federal level targets for heat, transportation fuels, power, and biobased products are met. Current policies are designed to provide agricultural support, rural enhancement, reduced dependence on foreign sources of energy, climate change mitigation/adaptation, and environmental sustainability. A fully integrated extension program will inform early adopter business leaders, energy experts, and agricultural producers with research based recommendations for securing America's energy future through sustainable bioenergy production.

What has been done
Since 2011, the LSU AgCenter, USDA-ARS, and other partnering agencies have participated in an AFRI biofuels grant. LSU AgCenter and cooperators have first-hand research and extension experience in sugarcane and sweet sorghum production, processing and conversion systems. Prior information from research conducted with energy cane and sweet sorghum will serve as important building blocks to initiate extension efforts. Efforts within the grant include presentations at local, national, and international meetings, field days with demonstration areas, written materials, and web based information to reach producers and business leaders interested in producing bioenergy from agricultural crops. AgCenter extension efforts play a vital role in the adoption of new research practices. This influence is monitored periodically in a quantitative manner by the AgCenter to provide better educational programs to its stakeholders.

Results

A survey was conducted and summarized in the winter of 2015-16. The survey was sent via email to LSU AgCenter and USDA-ARS Sugarcane Research Unit researchers, and cooperative extension agents working in Louisiana. A total of 50 surveys were completed and returned. Twenty-two (22) percent of the respondents were AgCenter researchers, 12% were USDA-ARS researchers, and 66% were AgCenter extension personnel. A total of 14% of the respondents had state-wide job responsibility and the remainder had parish/regional job responsibilities. A total of 24 parishes were represented in the survey.

The following results summarize the survey.

Responses to the survey questions were 0 = No Knowledge, 1 = Awareness, 2 = Knowledgeable, 3 = Very Knowledgeable

The mean rating score for questions 1 to 9 was 1.07, which indicated awareness of the issues related to biofuels/bioenergy. Responders had the highest knowledge level for question 5 (Cultural practices required to grow crops for biofuels production). I surmise that many responders can relate to sugarcane and grain sorghum, which are very similar to energycane and sweet sorghum, respectively.

The lowest scores for knowledge assessment were those for questions 9 (Economic data to guide decision-making about producing crops as biofuels alternatives) and question 10 (Technology to convert crops to biofuels). The response to these two questions point toward what many know at this time: the economics and conversion technologies are not at a competitive point. These results point toward a frustration for many when developing an extension program for biofuels/bioenergy, the lack of an industry partner that is attracting producers. It is difficult to direct information and to provide the necessary feedback to research programs when the business model is incomplete.

Responders indicated that the preferred method of information delivery was by direct mail followed closely by email and other internet based methods. In a previous survey of sugarcane producers, their preferred method of information delivery was person-to-person. The research and extension community should take note of this.

Results indicate that it is vital that researchers, specialists, and county agents continue to create and/or pursue research-based information to build knowledge in the area of biofuels/bioenergy. The knowledge gap is wide regarding biofuels/bioenergy. Results of this survey should reinforce the AgCenter's extension mission that plays a major role in influencing the adoption of management decisions for future biofuels/bioenergy industries in Louisiana.

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

Outcome #2

1. **Outcome Measures**

Implementation of sustainable biofuels systems

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

See Results Section of Qualitative Impact Statement

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 9

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
724	Healthy Lifestyle	0%	20%	0%	20%
806	Youth Development	100%	80%	0%	80%
	Total	100%	100%	0%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	100.0	8.0	0.0	1.0
Actual Paid	38.8	8.8	0.0	1.0
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**
1959631	328354	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1959631	303591	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
6960167	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Louisiana 4-H Youth Development Program targeted Louisiana youth using age appropriate, research-based, educational experiences in three mission mandate areas: Citizenship, Healthy Living and

Science and Technology and entrepreneurship (SU AgCenter). Programs that were conducted focused on the development of four essential elements in youth--belonging, independence, mastery and generosity. In this state, 4-H continues to offer a broad range of learning opportunities for youth, including but not limited to, traditional school club programs, school enrichment activities and community service learning. Delivery of educational programs other than in-school clubs was emphasized. Youth were guided in developing skills that result in effective decision-making, planning, and interacting with others.

Examples of specific educational activities include:

• 4-H club meetings, livestock shows, camps, fairs & festivals, field trips, workshops & clinics, school enrichment, after school programs, parish achievement days, mentoring programs, peer counseling, and family events.
• YES--SU AgCenter's Youth Educational Support and After School Program
• Recruitment, training and retention of both adult and youth volunteers to assist with program delivery.
• Innovative programs that enhanced social status for rural and urban youth and introduced them to new scientific and technological discoveries.
• Learning experiences targeting at-risk children, youth, and families in community settings to increase self-reliance, self-esteem, and confidence and encourage healthy lifestyle choices.
• Taught business techniques, ethics and etiquette to aspiring entrepreneurs.

• Empowered youth to develop and make positive choices as good citizens.

2. Brief description of the target audience

This program targeted Louisiana youth ages 9-19 in 64 parishes as well as youth and volunteers. A large number of these children under 18 years of age are placed at risk because their families survive on low income and limited resources. They lack knowledge, information, and/or skills to utilize existing resources to improve their quality of life. Eighteen percent of Louisiana families with children and 23% of adults without children live in poverty. Poverty rates are higher among African-Americans (44%) and children 18 and under (31%). Louisiana ranks 13th in the US for Food Stamp Program participation, 74% of those eligible. Parents and/or guardians of these children are also targeted. Additionally, children and adolescents who are placed at risk, those who are potentially at risk and children who need various forms of mentoring will also benefit. Program staff and volunteers will be trained to ensure effective and efficient delivery of information.

3. How was eXtension used?

The eXtension Moodle platform was used for training youth and volunteers in an online learning environment. Enrollment for each course is as follows:

• LA Camp Counselor Training - 239 students enrolled
• LA 4-H Risk Management Training - 303 students enrolled
• LA 4-H Youth Development and Volunteerism Course - 21 students enrolled
• LA 4-H Youth Development Programming - 25 students enrolled

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	293967	880824	820198	1438791

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	9	0	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2015	2129198

Output #2

Output Measure

- Number of Web page visits

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of youth participating in service projects

Year	Actual
2015	20266

Output #4

Output Measure

- Number of hours of service performed by youth

Year	Actual
2015	37912

Output #5

Output Measure

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

Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of educational program activities

Year	Actual
2015	10400

Output #7

Output Measure

- Number of educational contacts

Not reporting on this Output for this Annual Report

Output #8

Output Measure

- Number of published materials distributed

Not reporting on this Output for this Annual Report

Output #9

Output Measure

- Number of research & extension outreach publications developed (in-house)

Year	Actual
2015	12

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Youth gain knowledge, improve skills or change attitudes about healthy living, science, citizenship and/or science & technology.
2	Youth are engaged as contributing citizens within their community.
3	Youth and adult volunteers serve as competent leaders in Louisiana 4-H and other youth development programs.

Outcome #1

1. Outcome Measures

Youth gain knowledge, improve skills or change attitudes about healthy living, science, citizenship and/or science & technology.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Since the 1930's, over one million acres of Louisiana's coastal wetlands have converted to open water, and without bold action on a scale never before attempted in the United States, Louisiana will lose another one million acres in 40 years. The potential for loss of life, infrastructure, industry, ecosystems, and local culture cannot be stressed enough, and the loss of land in coastal Louisiana will directly affect our nation's security, navigation, energy consumption, and food supply. The protection and restoration of coastal Louisiana is not just a concern of Louisiana citizens, but is recognized as a global challenge that will persist well into the next generation. Continued land loss in coastal Louisiana will result in severe ecological and economic ramifications that will be felt on a global level. The need for individuals willing to make significant contributions to help combat this loss and create a sustainable Louisiana is immense.

What has been done
Louisiana's AgCenter 4-H Youth Development Program has created a wide variety of environmental programs to inspire and train the next generation of environmental stewards. These programs range from camps, special interest programs, school enrichment programs, field trips and service projects. During the summer, students are encouraged to attend four summer camps that use the program curriculum and provide wetland-related, hands-on learning activities: 4-H University, 4-H Camp Grant Walker, Louisiana Outdoor Science and Technology (LOST) Camp and Marsh Maneuvers. The Louisiana 4-H Youth Development Program reaches out to schools through the 4-H Youth Wetlands Education Program, AgMagic, and School Gardens. Opportunities to participate in wetland service projects are available to students throughout the year in various locations across the state. Students have helped with vegetative plantings and invasive species removals, constructed and installed wood duck boxes, and assisted in trash bashes/beach sweeps.

Results

A pre- and post-test was given to participating students (N = 42) during four sessions of Marsh Maneuvers. Combined pre- and post-test results showed an overall improvement in test scores at the conclusion of camp, with the average score increasing 17% across grades 7-12. As a result of 4-H University Clover College Sessions, 69% of the participants felt their decision- making skills were improved and their communication skills increased as a result of the experience. These decision-making and communication skills are crucial to promoting environmental awareness and stewardship.

The 4-H Youth Wetlands Education and Outreach Program (4-H YWP) has reached 600,000 students and 9,000 educators. A pre- and post-test, specific to each grade level, was given to the students participating in the 2014-2015 Youth Wetlands Education and Outreach Program. For upper elementary school (3rd & 5th grade) students, the mean post-test score (84%) was significantly higher than the mean pretest score (53%). For middle school (6th & 8th grade) students, the mean post-test score (64%) was significantly higher than the mean pretest score (55%). For high school (9th & 12th grade) students, the mean post-test score (88%) was significantly higher than the mean pretest score (35%).

As a result of AgMagic, 88% of the teachers reported that students had a better understanding of the importance of Louisiana agriculture as a result of their Ag awareness field trip experience.

Results of school garden evaluations showed that pre-test scores of children's gardening knowledge was 4.65 compared to their post-test score of 5.29. The scores following the gardening program were significantly higher than the scores prior to the invention.

Environmental surveys were administrated to 4-H members who participated in Environmental 4-H programs. Over three years, a range of 86.7% to 90.1% of the youth indicated that they were willing to give their time to protect or improve the environment. When it came to a willingness to organize an activity to protect to improve the environment, 81.9% to 83.6% of youth agreed that they would engage in this type of behavior.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

Outcome #2

1. Outcome Measures

Youth are engaged as contributing citizens within their community.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	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
806	Youth Development

Outcome #3

1. Outcome Measures

Youth and adult volunteers serve as competent leaders in Louisiana 4-H and other youth development programs.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Leadership development is a key part of healthy adolescent development. According to the National Alliance for Secondary Education and Transition (2013), youth development programs encourage positive growth by providing youth with the opportunity to learn about their strengths, weaknesses, and interests. From there, youth set goals, gain confidence, develop motivation, and strengthen their skills to become successful adults. Research suggests that being involved in programs like 4-H increases the perceived life skill development (Bruce, Boyd, & Dooley, 2004). Most leadership models focus solely on skills development without consideration of application opportunities to practice leadership skills (Redmond & Dolan, 2014). Mortensen, Lichty, Foster-Fishman, Harfst, Hockin, Warsincke, & Abdullah (2014) posit that youth must be engaged in leadership development experiences that are meaningful to their lives. LSU AgCenter 4-H Youth Development Program understands the need for youth leadership programs to not only focus on leadership life skill development, but also have application opportunities in order to develop leadership skills in youth. Through these opportunities, teens gain the skills and confidence needed to interact with other peers and adults.

What has been done

The Louisiana 4-H program provides opportunities for youth to develop leadership skills in many ways (Moran, Hebert, Martin, Fox, Tarifa, & Cater, 2009). Within local 4-H clubs and teen leadership programs, youth are given the opportunity to serve as officers, practice their leadership skills, and lead service projects in a wide variety of settings. Youth are trained through officer trainings, leadership workshops, focused experiences, and adult support. 4-H members are also able to develop and apply their leadership skills through service-learning projects. 4-H historically has given back to the community by encouraging young people and adults to volunteer. Service to the community helps young people learn caring, leadership, and citizenship. One significant leadership platform within the Louisiana 4-H Youth Development Program is Regional and State 4-H Leadership Boards. Leadership Boards are groups of young people formed to provide leadership to Regional and Statewide 4-H Programs. Three of the five regions have a Regional 4-H Leadership Board. Louisiana has seven boards that each focus on a specific aspect of the program. The Boards are: Citizenship, Executive, Food and Fitness, Performing Arts, Science, Engineering and Technology, and the Shooting Sports Ambassadors. The State 4-H Junior Leadership Conference reaches over 300 youth annually with teens teaching teens about aspects of leadership. Participants of the conference attend workshops on a variety of topics including leadership development, teamwork, service-learning, outdoor skills, science, engineering and technology, and healthy living.

Results

Teens that participated in leadership development programs noticed a positive change in their confidence, peer interactions, and their leadership skills. Participants of the leadership boards were able to use their leadership skills to help with the many other programs offered through the LSU AgCenter and 4-H clubs. Seventy-nine percent of the youth who participated in the Junior Leadership Conference claimed their knowledge of leadership had increased. In a study of Louisiana 4-H Leadership Board members, Moran (2014) reported that board members had an overall construct mean of 3.55 based on a 4-point scale. These board members gained a lot of leadership life skills from their board involvement. Service is an integral part of building leadership. Each year, 4-H members evaluate needs in their community and plan projects accordingly. Forty-four parishes conducted 96 service projects with over 20,000 4-H members involved giving 37,576 accumulated hours? worth of $866,686.30 in volunteer time. The service reached 174,719 individuals with over $100,000 funds generated and almost $64,000 items donated.

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
- Appropriations changes
- Public Policy changes
- Government Regulations
- 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

See Results Section of Qualitative Impact Statement

Key Items of Evaluation

VI. National Outcomes and Indicators

1. NIFA Selected Outcomes and Indicators

Childhood Obesity (Outcome 1, Indicator 1.c)	
0	Number of children and youth who reported eating more of healthy foods.
Climate Change (Outcome 1, Indicator 4)	
0	Number of new crop varieties, animal breeds, and genotypes whit climate adaptive traits.
Global Food Security and Hunger (Outcome 1, Indicator 4.a)	
0	Number of participants adopting best practices and technologies resulting in increased yield, reduced inputs, increased efficiency, increased economic return, and/or conservation of resources.
Global Food Security and Hunger (Outcome 2, Indicator 1)	
0	Number of new or improved innovations developed for food enterprises.
Food Safety (Outcome 1, Indicator 1)	
0	Number of viable technologies developed or modified for the detection and
Sustainable Energy (Outcome 3, Indicator 2)	
0	Number of farmers who adopted a dedicated bioenergy crop
Sustainable Energy (Outcome 3, Indicator 4)	
0	Tons of feedstocks delivered.