2016 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

1. Executive Summary

The fiscal year 2016 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 aim 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 Ag Centers 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, the Interim Chancellor also served as the vice chancellor for research; and the former vice chancellor for extension served 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 up to August 2016. The Southern University System reorganization plan of 2016 combined the SU Ag Center and the SUBR College of Agricultural, Family and Consumer Sciences (CAFCS) with a Chancellor-Dean to administer the new Land Grant Campus. Dr. Bobby R. Phills was named as the new Chancellor-Dean for the Land Grant Campus. In this capacity, Dr. Phills serves as Chancellor of the Southern University Agricultural Research and Extension Center (with research and cooperative extension components) and also as Dean of the College of Agricultural, Family and Consumer Sciences (with academic components).

Both the LSU AgCenter and the SU Ag Center 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. 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 Ag Center has faculty and staff located in 34 of 64 parishes (counties). External grants and contracts allow the SU Ag Center to have a presence in all 64 parishes of the state. At 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.

FY 2016 was a particularly hard year for the state of Louisiana with four major flood events during the year. In the early part of the year, the northwestern part of the state was impacted by flooding on the Red River which affected the animal industry through overflow onto pasture lands. The row crop industry in northeast and north central Louisiana experienced delayed planting and extensive replanting in the spring as a result of rain-fed flooding. Also in the spring, the strawberry industry in southeast Louisiana was affected by flooding that resulted in many growers having to discard fruit that had been flooded. Finally, in late summer southeast and southwest Louisiana were hit with an historic rain event that caused unprecedented flooding across urbanized areas, urbanized clusters, and rural areas of the regions. All of the flooding resulted in the need to devote significant resources to flood recovery efforts.

In FY2016, approximately 13.45% of the LSU AgCenter's overall budget was provided by federal funds; 51.85% by state funds and 34.70% 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 have exceeded 18% since 2008 and have significantly affected programs jointly funded with state and federal dollars. Reductions in FTEs/SYs and operations and travel budgets have become enduring challenges to providing traditional levels of research and extension program diversity. Strategic planning, ever-increasing use of social media technologies and tools, expanded reliance on trained volunteers, and intensified efforts to secure sustainable funding from public/private grants and local partners have been key approaches used to meet these challenges. During the 2015 federal fiscal year, the LSU AgCenter offered a retirement incentive that resulted in 24 faculty retirements. These retirements impacted organizational capacity to conduct activities as well as the outputs and outcomes achieved for the program period.

SU Ag Center experienced severe budget reductions during the past nine years with an occasional onetime increase. Unless alternative sources of revenue for the state are approved, state budget problems are expected to get even worse in FY 2017. State funding for the land-grant mission has been reduced by about 45 percent since 2008. The big drop in oil prices is one main reason for Louisiana's budget difficulties. Loss of employees and the uncertainty of replacing them were some 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. In the face of loss of state and federal funds, the Center's faculty and staff applied for and received about eleven external grants and contracts for about $3 million to conduct research and extension activities and provide research-based educational information and services to residents throughout the state. In FY 2016, about 46% of the SU Ag Center's operational budget was from federal appropriations and 54% by state funds. Further budget reductions in state funds will certainly impact our ability to meet the federal matching requirements.

During FY 2016, the LSU AgCenter and SU Ag Center 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 Ag Centers 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 Ag Centers. The LSU and SU Ag Centers 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 Ag Center 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 Ag Center plans to address those issues.

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 FY2016, the Louisiana Cooperative Extension Service (LCES) 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. Needs-based programs, as identified by stakeholders, were conducted by Extension faculty housed in parish, regional and campus offices. 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 28,000 educational group events such as classes, workshops, presentations, clubs and camps which resulted in nearly 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.

The emphasis on accountability and reporting has continued. The extension reporting system has matured to allow supervisors and faculty increased access to reports. The emphases on training faculty to use the system, on more frequent reporting, and on a broader range of faculty required to report into the system has continued. These emphases continue to support 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 FY2016 POW.

Summary

The LSU AgCenter and SU AgCenter have and will continue to deliver high-quality, relevant, timely and effective programs to meet stakeholder needs. Due to ongoing economic climate in the state, stakeholder input will continuously be used to redirect program resources from programs having less impact to those with greater impact or impact potential. To address emergency situation such as flood, we will frequently redirect resources to address the immediate and critical needs of Louisiana residents.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	295.0	41.0	128.0	41.5
Actual	218.0	39.0	107.2	41.0

II. Merit Review Process

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

- Internal University Panel
- External 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 were identified and evaluated. Peer reviews for proposed research activities of individual scientists continued according to NIFA guidelines. Review comments were solicited from peer scientists and state extension specialists. The comments and a synthesis of recommendations were provided to the originating scientists or team of faculty by the administration. State-level commodity groups met at least annually, and research and extension faculty continued to make presentations and receive comments/suggestions regarding future research and educational programming needs from these key groups. External extension advisory councils continued to validate outreach programs. Internal groups made up of multi-disciplinary faculty provided review and focusing of statewide research and extension efforts. Both institutions conducted program reviews to assess program effectiveness and to 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 were used to seek input from all stakeholders in a fair and impartial manner that allows all an equal voice. Input was sought from both traditional and nontraditional audiences and the advisory committee and commodity groups were the major vehicles through which stakeholders provide input. While some individuals were specifically sought out to provide input because of their role in the related program community, others were recruited using a variety of strategies. Public meetings were announced using tools such as email, newspaper, radio, Websites, Twitter, YouTube and blogs and stakeholders were encouraged to attend as they were able. Accommodations were provided for individuals with special needs. Surveys were 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 were conducted to gather input from individuals who cannot attend meetings. Stakeholders were 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 were used to identify individuals and groups to have input into the programming process. One-on-one contact was 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 was 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 held meetings regularly with various stakeholder groups to obtain 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 were also carried out both at the local and state levels. Formal and informal meetings were held. Faculty and staff participated in community activities where they could 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 utilized available resources at their disposal to interact and obtain important inputs.

Input was 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 continued to be used most frequently. Surveys of both traditional and non-traditional stakeholder groups were used to gather such input. Utilizing Web-based survey tools became the method-of-choice to collect input from stakeholders who could not always participate in meetings. Occasionally focus group meetings and meetings with key individuals in a community were used to garner input. The nominal group technique or some modified version thereof was typically used to identify and prioritize issues in advisory committee meetings.

3. A statement of how the input will be considered

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

Brief explanation.

The major means of utilizing stakeholder input was to assist faculty in identifying emerging issues and in evaluating ongoing programs. Stakeholder advisory groups helped to redirect extension programs and research projects when necessary. Prioritization of issues needing attention was a major role of advisory committees. Input from the parish (county) level was often directed to one or more state level faculty for their consideration. Also, state-level advisory groups provided input directly to state specialists, and this information then went back to the parish groups for their consideration. Due to ongoing economic climate, stakeholder input was also being used to redirect program resources from programs having less impact to those with greater impact or impact potential. To address emergency situation such as flood, we also redirected resources to address the immediate needs of Louisiana residents. We also While stakeholders were not typically included directly in the hiring process, their input was considered in identifying the need to fill key positions. Stakeholders were involved in an advisory capacity, frequently participated in the interview process and provided input to the position selection committees. Legislative and regulatory actions affecting the future of our stakeholders was 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 to ensure profitability 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
5255670	1710473	3915558	2050647

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	3536561	1710473	3921237	2050647
Actual Matching	3536561	1710473	3921237	2050647
Actual All Other	26521274	0	25636661	29627
Total Actual Expended	33594396	3420946	33479135	4130921

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	0	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%	23%	0%
502	New and Improved Food Products	0%	0%	18%	0%
503	Quality Maintenance in Storing and Marketing Food Products	0%	0%	5%	0%
701	Nutrient Composition of Food	0%	10%	5%	10%
702	Requirements and Function of Nutrients and Other Food Components	0%	10%	20%	10%
703	Nutrition Education and Behavior	50%	30%	10%	30%
704	Nutrition and Hunger in the Population	0%	0%	5%	0%
724	Healthy Lifestyle	50%	50%	14%	50%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	12.0	5.0	4.0	5.0
Actual Paid	8.7	4.4	1.9	5.1
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**
406503	135535	69500	292759
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
406503	236330	69500	326567
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1641431	0	430243	4280

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 research and extension 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 food has on each organ. The OWG are fun characters that help children understand physiology and healthy behaviors through books, games, dolls and informational videos. The 2-Step in the Classroom program is a grade-specific educational tool that encourages short bouts of physical activity integrated with academic lessons. Parent newsletters were monthly themed and included tips for incorporating physical activity into family life and kid-friendly, low-cost recipes emphasizing fruits and vegetables.

• EFNEP and SNAP-Ed programs continued to provide key education and outreach to limited resource youth and adults. The primary curriculum used was "Let's Eat for the Health of It."

• 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: increase nutritional awareness through research and outreach, assist with lowering the obesity rate, save money in low-income households, increase leadership development skills and self-esteem among youth, increase environmental stewardship, and decrease health risks associated with diabetes and heart disease. Those who participated in these activities were introduced to a variety of nutrition-related technology, gardening, and physical exercises. A well-trained group of adults who managed this effort greatly impacted its success.

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 limited income youth. 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 was used by the classroom teacher. Parents had the opportunity to volunteer and participate in the Body Walk when it visits 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 EFNEP and SNAP-ED included limited resource youth and adults.

3. How was eXtension used?

The Eat Smart curriculum located on the eXtension site is used for training EFNEP and SnapEd paraprofessionals for the Nutrition Educator Certification Exam.

V(E). Planned Program (Outputs)

1. Standard output measures

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	49486	708999	132255	0

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

Patent Applications Submitted

Year: 2016

Actual: 4

Patents listed

Foods for a Methionine Restricted Diet
Vitamin Formulations 1
Vitamin Formulations 2
A Dietary Supplement for Improving Sleep Duration and Quality

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2016	Extension	Research	Total
Actual	2	10	12

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2016	587863

Output #2

Output Measure

- Number of youth who participate in Smart Bodies Program

Year	Actual
2016	25557

Output #3

Output Measure

- Number of elementary schools participating in Smart Bodies program

Year	Actual
2016	69

Output #4

Output Measure

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

Year	Actual
2016	52

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 Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
"Childhood obesity is a serious problem in the United States putting kids at risk for poor health. Despite recent declines in the prevalence among preschool-aged children, obesity amongst all children is still too high" (Center for Disease Control and Prevention). Based on a study conducted by Ogden, Cynthia L., et al, in 2011-2014 for children and adolescents aged 2-19 years, the CDC indicates that the prevalence of obesity remained fairly stable at about 17% and affects about 12.7 million children and adolescents; was higher among Hispanics (21.9%) and non-Hispanic blacks (19.5%) than among non-Hispanic whites (14.7%); but was lower in non-Hispanic Asian youth (8.6%) than in youth who were non-Hispanic white, non-Hispanic black, or Hispanic. Four states (Alabama, Louisiana, Mississippi, and West Virginia) had an obesity prevalence of 35% or greater.

Obesity related chronic diseases cost tax payers billions of dollars each year and this issue has continued to be a major concern for all levels of government. At the national level, the issue of childhood obesity has been publicized and various positive preventive measures suggested and implemented by the First Lady, Mrs. Michele Obama. An example was the gardening project which provided opportunity for youth to participate in outdoors activity while exercising and to select, grow, maintain, harvest, prepare and eat healthy foods.

What has been done
SU Ag Center's Nutrition and Health Program and the Youth Program collaborated to implement activities to reduce childhood obesity. Research projects initiated previously continued; such as:

"Childhood Obesity Risk Reduction Initiative for Parents in Louisiana Using a Nutrition Primer" and three which ended: "Acceptability of Value-added Goat Products by School-age Children- a Strategy to Combat Obesity"; "Childhood Obesity Risk Reduction Risk Initiative for Children in Louisiana"; and "Expanding Nutritional Knowledge and Food Label Use among College Students in Louisiana". Information gathered helped extension to initiate a new project called Nutritionally Yours which incorporates Cooking Healthy and Enjoyable Foods (CHEF) Camp curriculum into youth activities during the summer. The curriculum was developed by nutrition specialists from the Southern University and LSU Ag Centers. It covers basic nutrition, hands-on cooking skills, cooking terminology, kitchen safety, food safety, etiquette and manners. Over 250 youth across the state participated in the program in FY 2016.

Results

Standardized CHEF Camp pre-and-post tests were administered using Turning Point Technologies software (TPT). TPT clickers were used to electronically capture and interpret all data. Seventy-five youth from East Carroll, West Carroll, East Baton Rouge, St. James and Evangeline Parishes participated in the pre and posttests to assess their nutrition education knowledge. The results showed that 34% of the participants increased their food selection preparation skills for healthy food. Also, 34% increased their nutrition knowledge and 31% increased their kitchen and food safety knowledge. The initial impact is summed up in the testimony of one of the parents of the participant: After the first year of her attendance in the CHEF Camp she tries to incorporate healthy and fresh veggies into her meals...I am so thankful that the SU and LSU Ag Centers are continuing to provide these skills to the children in the community...You are truly making a difference.

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

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

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

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

As referenced in the overview, FY 2016 was a particularly hard year for the state of Louisiana with four major flood events during the year. Significant resources were allocated to flood recovery efforts from early spring through September 2016. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project. Some resources such as personnel, were used to assist displaced citizens including youth.

The state budget problems continued to impact negatively on our activities during the period and is seriously threatening the ability of Southern University Ag Center to meet Federal match requirements.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Obesity among adults and youth is a growing health care problem at the national and local level and carries with it significant costs, both in terms of dollars and lives. In the United States, one-third of children and two-thirds of adults are classified as overweight or obese. Findings of the Adolescent School Health Program indicated that 41.3 percent of Louisiana youth ages 2-19 were classified as either overweight or obese. Only 5.9 percent of youth consume fruit more than four times per day and 11.7 percent of youth consume vegetables more than three times per day. Additionally, only 34 percent of youth met vigorous physical activity guidelines. To reduce the prevalence of overweight and obesity in Louisiana, it is essential that we teach younger children to adopt healthy nutrition and physical activity behaviors before they establish unhealthy habits.

In response to the increase in childhood obesity, the LSU AgCenter, in partnership with Blue Cross and Blue Shield of Louisiana Foundation, launched Smart Bodies (SB) in March 2005. SB is a comprehensive nutrition education and physical activity program for elementary school children, kindergarten through fifth grade, which is integrated into core curriculum objectives. The program incorporates classroom activities with hands-on learning to teach children how to build strong bodies and active minds. In the 12 years of its existence, the SB program reached 392,553 youth through 1,102 in-school programs. These programs were made possible through the collaboration of 20,518 teachers and 18,635 volunteers.

Summative evaluation results from the program indicate that students participating in SB

significantly increased their knowledge about the health benefits of eating fruits and vegetables and became more sure that they could drink a glass of their favorite juice for breakfast, eat their favorite fruit instead of their usual dessert with lunch, eat their favorite fruit instead of their favorite cookie or candy bar, eat two or more servings of fruit or fruit juice each day, and eat five or more servings of fruits and vegetables each day ($p < .05$). Children who participated in the SB program increased their knowledge about the effects and benefits of physical activity ($p< .05$).

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
102	Soil, Plant, Water, Nutrient Relationships	50%	0%	10%	0%
112	Watershed Protection and Management	10%	0%	14%	0%
123	Management and Sustainability of Forest Resources	20%	10%	7%	10%
124	Urban Forestry	0%	50%	0%	50%
132	Weather and Climate	0%	10%	0%	10%
133	Pollution Prevention and Mitigation	0%	10%	0%	10%
135	Aquatic and Terrestrial Wildlife	5%	0%	5%	0%
205	Plant Management Systems	15%	5%	20%	5%
215	Biological Control of Pests Affecting Plants	0%	0%	5%	0%
307	Animal Management Systems	0%	0%	19%	0%
311	Animal Diseases	0%	0%	7%	0%
403	Waste Disposal, Recycling, and Reuse	0%	15%	0%	15%
405	Drainage and Irrigation Systems and Facilities	0%	0%	2%	0%
604	Marketing and Distribution Practices	0%	0%	6%	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: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	7.0	3.0	23.0	6.0
Actual Paid	6.1	1.1	26.7	4.2
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**
286160	59103	976651	263058
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
286160	74040	976651	231305
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1155494	0	7388016	3980

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. During the plan period, 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.
- Research the environmental benefits of urban forests, wetlands, carbon sequestration and the urban forest effects on air quality.
- Research and quantified 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.
- Promoted and expanded participation in the Louisiana Master Farmer Program.
- Maintained and coordinated the natural resource extension Coastal Plants program.
- Continued research activities conducted by the Center for Natural Resource Economics and Policy (CNREP).

2. Brief description of the target audience

Target audiences included 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 used mainly as a back up information source to inform clientele about the effects of some of their farm and forest activities on climate change.

V(E). Planned Program (Outputs)

1. Standard output measures

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	89917	1006300	12777	0

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

Patent Applications Submitted

Year: 2016

Actual: 4

Patents listed

Rice Cultivar Designated 'CL271'
Thermoplastic Cellulosic Fiber Granules as Infill Materials for Artficial Turf
Rice Cultivar Designated 'CL153'
Rice Cultivar Designated 'CL272'

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2016	Extension	Research	Total
Actual	0	195	195

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2016	944826

Output #2

Output Measure

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

Year	Actual
2016	608

Output #3

Output Measure

- Number of private pesticide applicators receiving initial certification

Year	Actual
2016	485

Output #4

Output Measure

- Number of commercial pesticide applicators receiving initial certification

Year	Actual
2016	531

Output #5

Output Measure

- Number of private pesticide applicators recertified

Year	Actual
2016	1856

Output #6

Output Measure

- Number of commercial pesticide applicators recertified

Year	Actual
2016	1808

Output #7

Output Measure

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

Year	Actual
2016	6

Output #8

Output Measure

- Number of Louisiana producers receiving Louisiana Master Farmer certification

Year	Actual
2016	19

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
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Our largest agricultural commodity in Louisiana are our forest resources that cover the majority of our land area in the state. In total, there are an estimated 148,000 forest landowners in the state (Louisiana Forestry Association 2013). The harvest of timber, which has historically been Louisiana's number one agricultural crop both in terms of gross income and value-added processing (LSU AgCenter 2013), has declined dramatically since the 2008 recession from a peak of $5.3 billion in 2004 to $2.8 billion in 2008. However, in the last several years, there has been dramatic improvement in the industry both nationally as well as at the state level. In 2015, Louisiana's forest industry had a $2.99 billion dollar impact in value-added. Directly and indirectly, the forestry sector employs approximately 40,000 (20,000 directly) people in the state. Combined state and federal tax contributions from forestry is approximately 735 million dollars. The farm gate value from timber harvests comprise the greatest input to the agricultural sector($898 million in 2016) in Louisiana. Data indicates that even as our forestlands become more productive, the challenges in educating landowners and management professionals are greater than ever.

What has been done

Our goal is to assist all clientele, including owners and managers, in better managing their forest based resources in order that these resources can be sustained both environmentally and economically. Another goal is to assist landowners in managing their wildlife resources on these properties as a recreational opportunity for themselves or to supplement their

income through hunting lease enterprises. Through a series of educational activities, extension forestry (and other natural resource areas) educators provided forestry forums, field days,

prescribed fire workshops, logger education, project learning tree, tax and succession workshops, arborist trainings, and in person and written educational contacts with individual interactions targeting private forest landowners.

Results

A 2016 survey of forest landowners (N = 84) assessed the impact of the LSU AgCenter Extension Forestry Program on their knowledge and practice adoption of recommended practices. Participants (n = 59; 84%) reported that the program had contributed to an increase in their knowledge of the importance of defining forest management objectives and of the issues that can affect the management of their land. Participants (n = 58; 83%) also indicated that the program had increased their knowledge of the forestry business (e.g., economics, finance, risk) and forestry services available to them (e.g., professional forestry advice, government cost-share programs). Participants reported that the forestry program had increased their implementation of forest best management practices (e.g., reforestation thinning; n = 52; 77%); use of a forest management plan to make decisions about their land (n = 50; 74%); maintenance of inventory, costs, and returns records (n = 47; 70%). Additionally, participants reported an increase in their monitoring, maintenance or improvement of wildlife habitat (n = 45; 68%) and water quality on their land (n = 46; 69%).

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
124	Urban Forestry
133	Pollution Prevention and Mitigation
205	Plant Management Systems
215	Biological Control of Pests Affecting Plants
403	Waste Disposal, Recycling, and Reuse
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.

Not Reporting on this Outcome Measure

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
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Ozone depletion in the upper atmosphere has resulted in a significant increase in solar ultraviolet-B radiation (UV-B, 280-315nm) on the earth's surface. Stratospheric ozone depletion has resulted in a significant increase in solar ultraviolet radiation (UVB, 280-315nm and UVA, 315-400nm) on the earth's surface. With the future uncertainty of the ozone recovery and global climate change, there is a critical need for systematic evaluation of UV impacts on trees and forests. Urban forests are an integral part of urban green infrastructure, providing enormous ecological and social benefits to urbanites. Today, more than 80% of the US population lives in urban settings, yet we have limited understanding of how urban trees/forests cope with the harmful UV radiation and protect our living environment. Effects of the enhanced UV-B on living organisms and ecosystems have been a major concern for more than three decades. Nearly two-thirds of 400 plant species/cultivars, mainly annual crops, appear to be UV-B sensitive. Relatively little information exists on the effects of UV-B radiation on forest tree species, which account for 80% of the global net primary production. UV-B impacts are many and some have serious economic consequences. Many United States residents do not have sufficient knowledge about these impacts especially as they relate to health.

What has been done

We previously obtained two externally funded grants which continued during the year. The two grants were "Quantifying the Net Effect of Urban Wetlands in Mitigating Greenhouse Gas Emissions in Louisiana" and "Urban Tree Interception of UV (A/B) Radiation and Its Genetic Consequences". In Phase I study, a study of the biophysical/biochemical/anatomical properties of UV tolerance in more than 30 tree species was conducted. We found that on a whole leaf basis,

regardless of tree species or leaf age, tree leaves can generally absorb 91%-95%, reflect 5%-9%, and transmit very little (< 1%) incident UV-B radiation. Many species show a strong presence of UV absorbing compounds in both upper and lower epidermises and vascular bundles as well as in leaf hairs if present. We further identified 23 broadleaf tree species, which can attenuate 92%-99% of UV-B through their epidermal layers; thus the epidermal attenuation is shown to be the dominant UV-B screening strategy in most species studied. However, there are other species that allow UV-B to penetrate deeper into palisade tissues, and this may cause further DNA damage and damage on photosynthetic apparatus. Thus the outcomes of the phase I study warrant further evaluation of DNA damage/repair mechanism and tree canopy interception of UV radiation and its resulting consequences. Our on-going phase II study focuses on (1) investigating seasonal UV (A/B) induced DNA damage and/or the associated repair mechanisms in selected southern broadleaf tree species, and (2) developing seasonal UV (A/B) interception models by single tree canopy of live oak (Quercus virginiana) and in mixed urban forest canopies, to understand how urban forest influences UV radiation in urban environment. We are collaborating with (and/or obtaining input from) the following - USDA UV-B Monitoring and Research Program at Colorado State University, USDA Forest, University of Vermont, University of Maryland College Park, Louisiana State University, and University of North Carolina. The study is helping to identify and quantify UV-B absorbing compounds.
A mobile UV monitoring and research station was established at Southern University, this facility was used to train faculty, staff and students through collaboration with USDA UV-B Monitoring and Research Program (UVMRP) at Colorado State University.

Results

We have accomplished the following:
-Established laboratory protocols for measuring leaf optical properties, localizing and visualizing leaf UV-B absorbing compounds, and identifying and quantifying UV absorbing flavonoids and phenolic acids.
-Built a mobile UV monitoring station to study tree canopy influence on UV transfer.
-Developed genetic protocols on isolating and quantifying DNA/RNA and measuring CPDs and 6,4PPs to determine UV (A/B) induced DNA damage in tree leaves.
-Measured a general marker of DNA oxidative damage (8-oxodG) and protein and gene expression of UV-specific DNA polymerase (UVR2 and UVR8) to determine the repair of UV (A/B) induced DNA damage.
-Established a large database including leaf optical properties, depth of UV-B penetration into leaves, concentration of UV-B absorbing compounds, and leaf anatomy for more than 30 southern broadleaf species.
-Made available for selected species, data on localization, visualization, identification and quantification of UV absorbing compounds.
-Findings have been shared with the research and extension communities.
Upon completion of phase II, we will gain seasonal UV-induced DNA damage/repair mechanism in trees. The study will generate new knowledge that discovers UV-B screening strategies and UV-B tolerance mechanism in selected southern trees, leading to a better understanding of urban forest effects on UV radiation in urban environment and UV effects on the trees genetic stability. The information will enhance our ability to select UV tolerant species for maintaining healthier and sustainable forests with significant impact on the environment (and climate change). The results will have implications in predicting the effect of UV climate change on both wild-land and urban forests and adaptation of forests to the changing environment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
124	Urban Forestry
132	Weather and Climate
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
215	Biological Control of Pests Affecting Plants
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

As referenced in the overview, FY2016 was a particularly hard year for the state of Louisiana with four major flood events during the year. Significant resources were allocated to flood recovery efforts from early spring through September 2016.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

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%	24%	10%
135	Aquatic and Terrestrial Wildlife	5%	0%	6%	0%
204	Plant Product Quality and Utility (Preharvest)	5%	0%	0%	0%
205	Plant Management Systems	30%	20%	22%	20%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%	0%	0%
213	Weeds Affecting Plants	5%	0%	0%	0%
216	Integrated Pest Management Systems	5%	0%	11%	0%
301	Reproductive Performance of Animals	0%	10%	3%	10%
302	Nutrient Utilization in Animals	0%	20%	0%	20%
303	Genetic Improvement of Animals	0%	0%	5%	0%
307	Animal Management Systems	20%	30%	7%	30%
308	Improved Animal Products (Before Harvest)	0%	0%	2%	0%
311	Animal Diseases	5%	0%	5%	0%
313	Internal Parasites in Animals	0%	5%	0%	5%
601	Economics of Agricultural Production and Farm Management	0%	5%	15%	5%
704	Nutrition and Hunger in the Population	20%	0%	0%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	22.0	7.0	62.0	15.0
Actual Paid	17.1	7.0	51.2	19.0
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**
797902	320094	1872830	1003604
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
797902	298995	1872830	941886
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
3221874	0	11613845	16087

V(D). Planned Program (Activity)

1. Brief description of the Activity

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 were:

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, training sessions.
3. Maintained modernized facilities and acquird 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 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 incorporate 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 7.9 million acres of land in production and related agribusinesses:

- Cotton--259 producers with 109,500 acres in production that produced 90 million pounds of cotton.
- Feed grains--1,400 producers with 414,000 acres in production that produced 73 million bushels of feed grains.
- Rice--1,020 producers with 411,000 acres in production that produced 3.2 billion pounds of rice.
- Soybeans--2,500 producers with 1.4 million acres in production that produced 58 million bushels of soybeans
- Sugarcane--480 producers with 386,000 acres in production that produced 1.4 million tons (2.8 billion pounds) of raw sugar and 84 million gallons of molasses.
- Sweet potatoes-- 109 producers with 9,400 acres in production that produced 3.9 million bushels of sweet potatoes.
- Wheat--283 producers with 92,000 acres in production that produces 3.6 million bushels of wheat.

It also includes livestock and poultry producers, crawfish farmers and consumer groups related to enhancing the value of animal commodities. In addition, there were 7,000 producers with 33,000 acres of land in commercial production and an estimated 476,000 home gardens providing fresh vegetables, fruits and nuts.

The SU Ag Center specifically targets 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 not widely utilized for this planned program.

V(E). Planned Program (Outputs)

1. Standard output measures

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	215885	3070129	74395	0

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

Patent Applications Submitted

Year:	2016
Actual:	5

Patents listed

Herbicide Resistant Rice (Resistance to Acetohydroxyacid Synthase-Inhibiting Herbicides)
LSU irrigation System 1
Near Real-Time Pesticide Delivery System
MgO-impregnated Magnetic Biochar for Phosphate and Methylene Blue Removal from Aqueous Solutions
Growth of Spiroplasma Isolate from Scrapie Brain in Brucella Media and on Brucella Agar Plates

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2016	Extension	Research	Total
Actual	0	243	243

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2016	3835018

Output #2

Output Measure

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

Year	Actual
2016	47

Output #3

Output Measure

- Number of field demonstrations

Year	Actual
2016	306

Output #4

Output Measure

- Number of grower field days

Year	Actual
2016	63

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.

Not Reporting on this Outcome Measure

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
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Formal training and instruction in leadership development is a crucial skill which had not been offered to small, limited resource agricultural producers in the state of Louisiana (and possibly in the country). Economic crisis in Louisiana over the past decade, especially the high cost of farm inputs during FY 2016 made it difficult for producers to compete and remain profitable. The existence of many small farmers is in serious jeopardy as they are debt-ridden and are on the verge of being bankrupt. The Small Farmer Agricultural Leadership Training Institute at Southern University Agricultural Research & Extension Center was designed to address these needs with the goal of promoting small & family farm sustainability, survival and profitability through enhanced decision making skills and leadership development. The goal was to help farmers become better leaders while enhancing their overall farm management skills. The Louisiana Small Farmer Leadership Institute was modelled after the National Institute which has been recognized in the United States and abroad.

What has been done

Seven leadership sessions were conducted between 2015 and 2016 using three 4-day intensive training workshops (lasting over 8 hours each day). To further expand hands-on knowledge of participants, field trips were held to several states (Louisiana, Texas, Mississippi, Georgia, etc.) with 12 participants in each session. Topics discussed were: Developing the Leader Within, Planning the Business and the Team, Agricultural Legal Issues and Risks, Talking it to the Next Level, Agricultural Opportunities Unlimited (Summer Tour featuring Urban Agriculture), Civic Engagement, The Agricultural Professional, and Promoting the Business. Participants attended and experienced the 75th Professional Agricultural Workers Conference (PAWC) at Tuskegee University, Alabama, December 4-6, 2016. They also participated at the Graduation Ceremony in Baton Rouge, Louisiana hosted by the Southern University Land Grant Campus. In addition, participants had opportunity to interact and network with their peers from several states, research scientists, extension specialists, agricultural professionals from the USDA, and legal scholars from the Southern University Law Center.

In FY 2016, we conducted the 6th annual Louisiana Small Farmers conference to provide information to farmers by experts about the latest educational tools and resources which they can use to improve productivity and sustainability of their agricultural enterprises. About 108 producers and potential producers participated in the 3-day conference where 12 graduated and received certificates of participation. They also gained knowledge and skills on Modern Technology and Farming; Value Added Marketing Strategies and Techniques; Farm Labor Issues; Healthy Soils: Climate Change and Small Scale Agriculture; Produce Safety; Diversifying your Farm Operation using Bee Farming and Cut Flowers; Grant writing; and Round Table Discussion with LA Dept. of Agriculture and Forestry Commissioner.

Results

The survey of participants showed the following results:
-100 percent of the respondents said that with information from the Louisiana Small Farmer Leadership Institute, they found new business opportunities and networks for collaboration.
-100 percent of the respondents said that with the help of the Institute, they actually tried new ideas which yielded good results.
-Also, several of the previous graduates are usually invited to speak during each graduation. Two of them spoke of the benefits they have gained as a result of their participation at the leadership institute:
-Mr. Brenna Washington, a 2012 graduate attributes his success to the knowledge and skills gained at the institute as he now serves on the following organizations: Georgia Organics; Southern Sustainable Agriculture Working Group; Georgia Farmers Market Association; and Southern SARE.
-Mr. Leroy Conish, a 2011 graduate is a small farmer in St. James, Louisiana, he learned about adding value to products at the institute. In place of just whole okra, he now sells cut okra to his customers. His income from okra sales has doubled. Last season, he realized $12,000 for selling cut okra ? he sold all he produced.
-Other graduates from the Louisiana Small Farmer Leadership Institute said that they are accomplishing the following:
-Mentoring other farmers and potential (or business owners)
-Helping improve their community
-Serving on a local, state or national committees
-Improving my business decisions
-Increasing business income

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
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases
313	Internal Parasites in 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 Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Small-scale producers faced tough economic times due to challenges of rising input costs coupled with unstable prices of food and the resulting problem of generating sufficient income and being profitable. Small agricultural producers who adopt alternative livestock and crop enterprises such as, goats, rabbits, vegetables, fruits, and herbs can earn profit while addressing global food security and hunger issues. According to USDA/ERS, in 2015 about 42.2 million Americans lived

in food insecure households, including 29.1 million adults and 13.1 million children. Thirteen percent of households (15.8 million households) were food insecure and 5% of households (6.3 million households) experienced very low food security. With about 18.4% of its citizens living in food insecure households Louisiana was ranked at number 3 on the list of twelve states exhibiting statistically significantly higher household food-insecurity rates than the U.S. national average. Working to ensure sustainable animal and plant productivity and profitability are of paramount importance to the agricultural sector of Louisiana. Addressing these close knit and perennial problems through research in alternative crops could benefit the farmers, consumers, and governments worldwide.

What has been done

Faculty and staff continued to implement research projects and extension programs to ensure sustainable agriculture focusing on alternative crops. The grants were for $500,000 each. One alternative crop research introduced and funded in 2012 - Roselle Hibiscus continued to attract new uses for small farms and niche markets. The second grant funded in 2013 studied specialty mushroom as a niche market crop for limited resource small family farms. In FY 2016, three sustainable agriculture field days were conducted to disseminate information about new medicinal uses of these alternative crops with over 410 producers in attendance.

To help combat the chronic problem of food desert, WISTERIA Alliance has been providing practical hands on training for women who live on farms, and those with interest in starting a farm, and/or urban & community gardeners. Three WISTERIA Alliance hands-on workshops were held during the period for 130 women gardeners and potential farmers. Research-based educational information was packaged and disseminated through extension agents to the clients. Farm visits were conducted by research and extension personnel to advise clients and sometimes provide "on the spot" solutions to problems they may have.

Results

-Ninety-five percent of participants in the sustainable agriculture field days stated that they gained new knowledge and skills.
-Ninety percent said they will certainly utilize knowledge and skills gained.
-Fifty-two farmers are actively growing hibiscus, making hibiscus-related products such as, tea, jelly, jam, and cookies and selling them in local farmers' markets.
-WISTERIA Alliance provided practical hands-on training for women to enhance their skills in farming and gardening, selection and use of farm tools, tractor and use of machinery, farm equipment safety, etc.
- Faculty and staff are implementing the $1 million extramural grants in sustainable agriculture projects.
- The Southern University Land-Grant Campus has been approved to establish the Medicinal Plant Institute to conduct research in alternative crops to find medicinal and other beneficial uses for the crops and to help add value and increase the income of producers.

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
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
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Sugarcane was grown on approximately 430,000 acres in Louisiana in 2016. The economic impact of the sugar industry is great as it ranks as one of the highest valued row crops in the state. The total value of sugar production in Louisiana exceeded $728 million dollars in 2015. This value was extremely important to the economies of the 23 parishes where it is grown, processed into raw sugar, and further processed into refined sugar products. Refined sugar products leaving Louisiana are purchased in at least 25 states.

Research conducted by the LSU AgCenter, USDA-ARS, and American Sugar Cane League is vital for sustaining Louisiana sugar producer and processing operations. When new sugarcane varieties are released, disseminating performance and management information is vital towards their adoption. Innovative research and adoption of new technologies and management practices has kept Louisiana's sugarcane growers and sugar processors in business. AgCenter education efforts play a vital role in the adoption of new research practices.

What has been done

The LSU AgCenter has an ongoing sugarcane educational program whereby county agents visit farms to counsel sugarcane producers on specific problems, organize group grower and processor meetings, field days, and demonstrations to disseminate information on the latest production technology, and use written materials and radio and television programs to reach producers and other users of sugarcane crop information. The AgCenter has played a major role in influencing the decisions of producers regarding various management practices involving sugarcane production and its processing into raw sugar. 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 summer of 2016. The survey was sent via email to 447 sugarcane producers and processors, crop consultants, among others in the sugarcane growing region of south Louisiana. A total of 175 surveys (39.1%) were completed and returned. Responses were recorded from 18 parishes. The following results indicated the percentage of producers that have adopted or are considering adopting various sugarcane production practices: Adopting new sugarcane varieties because yield performance data is available (90.9%); adopting new sugarcane varieties because traits other than yield are well characterized (95.8%); diversifying the number of varieties planted (92.7%); following prescribed agricultural burn practices (99.2%); using soil testing to build fertilizer program (91.7%); applying lime within the last 5 years to adjust soil pH (85.0%); and applying fungicides, if needed, for the control of brown rust (89.3%). Producers also reported feeling confident that they can control new weed problems (60.3%) as well as the Mexican rice borer (61.7%).

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
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
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana youth in underserved neighborhoods have limited access to healthful food and knowledge about how to make healthy lifestyle choices. These youth are at increased risk for nutrition-related diseases such as diabetes, heart disease and obesity. The research-based information and programs of the LSU AgCenter can be an important contribution in facilitating changes in the knowledge and choices of these youth. One obstacle to making these choices can be a lack of commitment to personal change. The FIT for Kids Teaching Teens Program has encouraged active engagement of youth ages 13 to 18 years old by teaching them to become mentors for younger children.

What has been done
In the FIT for Kids Teaching Teens Program, youth who had previously participated in the FIT for Kids Program for younger children, stated that they wanted to teach basic cooking skills and nutrition to children at other community sites. The focus of the Teaching Teens Program is to give the teenagers the knowledge and skills they need to mentor younger children. The youth chose to give cooking demonstrations and to deliver lessons with more hands-on opportunities for the younger children. The Teaching Teens were guided in choosing appropriate lessons and recipes for the younger children and were trained in how to deliver these lessons in a safe and appropriate manner. They were guided in planning and practicing the actual lessons they would deliver, and also learned leadership and communication skills that would help them be effective with the younger audience. Teens were trained and guided in developing their chosen cooking and nutrition lessons during the first two sessions of the program. They then delivered two different lessons to approximately 60 children at four city community centers.

Results
The program was assessed through retrospective questionnaires. The participants reported an increase in their knowledge of cooking and greater confidence in their teaching and leadership skills. Teens indicated an interest in participating in the Teaching Teens program planned for next summer. The FIT for Kids Teaching Teens Program, focusing on teaching nutrition information and cooking skills, can successfully engage youth participants in a deeper level of understanding of healthy life style goals and can encourage the development of leadership and communication skills. As one youth participant said, "I feel different because I changed younger kids? decisions about healthy food." The younger recipients of the delivered programs benefit by learning from youth they can see as peer role models.

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

As referenced in the overview, FY 2016 was a particularly hard year for the state of Louisiana with four major flood events during the year. Significant resources were allocated to flood recovery efforts from early spring through September 2016. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project. Some resources such as personnel, were used to assist displaced citizens including youth. The state budget problems continued to impact negatively on our activities during the period and is seriously threatening the ability of Southern University Ag Center to meet Federal match requirements.

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

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%	50%	0%	50%
802	Human Development and Family Well-Being	0%	40%	0%	40%
	Total	0%	100%	0%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	5.0	0.0	2.0
Actual Paid	0.0	8.0	0.0	3.0
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**
0	236621	0	170342
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	264356	0	169028
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:

1. Extension and Research faculty worked cooperatively to develop and disseminate 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 were designed to support objectives on financial planning and management.
4. Partnerships with banks and other financial agencies were solicited and their expertise utilized.
5. Research results and other information were communicated to customers through extension personnel in the form of publications, conferences, workshops, home/office visits, demonstrations and other educational resources.
6. Collaborated, cooperated and partnered with local, state and federal agencies, institutions, groups, private organizations/associations in seeking and delivering services to citizens.
7. Others include: Nutrition Classes, Child Care Classes, **Second Chance 2-Recover workshops (a program to work with incarcerated individuals to ensure useful and productive re-entry in society**), Parenting Workshops, Parish and home visits, Demonstrations, Training sessions for adults and children, etc.
8. Conducted workshops/training to promote positive home environments and encouraged community involvement
9. Promoted physical fitness & healthy eating.
10. Conducted health fairs (in collaboration with Nutrition and Health Program staff, communities, health organizations, schools, etc.).
11. Compiled and disseminated resource directory (pamphlets).
12. Conducted educational trainings on emergency preparedness.
13. Conducted educational trainings to help those incarcerated stay connected to their families, prepare to re-enter society and find gainful employment upon release.

2. Brief description of the target audience

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

3. How was eXtension used?

eXtension was not extensively used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	17517	10557	0	0

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

Patent Applications Submitted

Year: 2016

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2016	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2016	7

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
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Great Recession of 2008 resulted in substantial declines in residential real estate, the stock market, and employment opportunities. Many now agree that one of the main causes of the 2008 global financial crisis was the large numbers of subprime loans given to consumers who were both financially illiterate and financially insecure. Following the crisis, federal and state lawmakers passed financial literacy legislation and new consumer protection measures to increase literacy and improve financial decision-making. Researchers also intensified their efforts to find innovative ways to increase Americans financial literacy. Consequently, in its 2008 Annual Report, the President's Advisory Council on Financial Literacy (PACFL) recommended that for common understanding, the private sector, state and local governments, and nonprofit organizations should adopt a uniform definition for financial literacy and financial education. The Council defined financial literacy as "the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being."

What has been done
SU Ag Center research & extension faculty and staff implemented a project "Assessing and expanding financial literacy among undergraduate students" to assess levels of financial literacy among a selected group of undergraduate students. Five hundred and thirty (530) undergraduate students participated in the weekly lessons which lasted 10 weeks. We tracked the effectiveness of instruction on basic financial concepts such as credit, saving, and investing, among others. We also examined the role of socioeconomic and demographic characteristics on knowledge, attitudes, and behavior. The project staff published a booklet "Lessons on Money" and disseminated 6,500 copies to target audience and to faith-based organizations, limited resource families, and extension communities. In addition to the booklet, other materials were developed for Money Chats to the aforementioned groups.

Results
Usable surveys were derived from 530 participants in the pretest and from 275 in the posttest. The average score on the financial literacy and personal financial matters pretest was 38% compared to 70% on the posttest, a knowledge gain average of about 32% (almost double their pretest knowledge). Some participants have indicated that they have made serious changes in spending behavior, decreased spending levels, which have helped them to lower their financial insecurity. Participants have also indicated that they will share knowledge and skills gained with their family members, friends and others which will help to spread the financial literacy to the wider communities around the state. Along with distributing the money lesson booklets, we have started to expose the greater university community to the lessons in financial literacy. In addition, we have exposed 28 high-school students in the collegiate 2016 summer program to basic saving and investment vehicles available to individuals and businesses.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

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
2016	603

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
"In 2014, the U.S. Department of Justice confirmed Louisiana remained number 1, among the 50 states, with 38,030 in prison, a rate of 816 per 100,000 over 100 points ahead of next highest state Oklahoma. Because the US leads the world in incarcerating its people, this means Louisiana is number one in the world" (The Huffingtonpost, May 10, 2016). Louisiana is home to

many prisons and correctional institutions. http://www.huffingtonpost.com/bill-quigley/louisiana-number-one-in-i_b_9888636.html. A great majority of those who are incarcerated are young males of African-American descent. According to the U.S. Bureau of Justice Statistics (BJS), in 2013 non-Hispanic black males accounted for 37% of the total male prison population, non-Hispanic whites 32%, and Hispanic males 22%. Prison data are corroborated by the Federal Bureau of Prisons (BOP). Once incarcerated, most of these prisoners do not have enough rehabilitation to deal with the stress associated with being away from their families and the larger free society when they are released.

Also, despite the fact that they acquired technical and other useful job enhancing skills while in prison, the prisoners do not have the skills to write and submit good resumes for jobs. Upon release from prison, most of these individuals will re-offend as a result of not having access to adequate post-prison rehabilitative services, which leads to their being imprisoned again. "Using a Bureau of Justice Statistic study finding inmates released from state prisons have a five-year recidivism rate of 76.6%, the USSC study calculated comparable federal prisoners released have a 44.7% re-arrest rate after five years." http://www.huffingtonpost.com/christopher.../report-documents-us-recid_b_9542312.html. We have an overwhelming need for these individuals to receive broad trainings in resume writing and for parents, training in stress and anger management before being released from prison. These individuals, their families, society in general could benefit from the skills acquired before the prisoners are released.

What has been done

SU Ag Center utilized 1890 Extension Funds along with two external grants obtained by faculty to conduct prison pre-release/re-entry "Second Chance 2 Recover" and living interactive family education "4-H LIFE programs to inmates. Second Chance 2 Recover classes were conducted at Elayn Hunt Correctional Center (EHCC), Iberville Parish; Louisiana Correctional Institution for Women (LCIW), Caddo Parish; and East Baton Rouge Parish Prison; while 4-H LIFE classes were conducted at Opelousas City Jail and East Baton Rouge Parish Prison. The staff and volunteers provided classes to inmates who were within 3-6 months of being released. One class is a replication from the University of Missouri's 4-H LIFE program which provided parenting classed to inmates and affords inmates an opportunity to have intimate family visits, using a 4-H meeting model. The other, "Second Chance 2 Recover" includes a mentoring and caregiver component to provide additional support to family and child. Program staff received instructions on how to deal with incarcerated individuals and how to conduct workshops in prison and correctional establishments. Workshops were conducted for prisoners who are parents, resume writing sessions were conducted with the following topics: Budgeting, Money Management, Addictive Behaviors, Anger Management, Communication Skills, Developing Job Skills and Plan of Action (This class includes inmates developing a plan of action to implement once they are released), Resiliency and Optimism, and Self-Esteem. Job/Resource Fair was also conducted at the Louisiana State Penitentiary (Angola). Inmates received health and business startup information from the Communities of Color Network and the Center for Small Business and Economic Development of the SU Ag Center.

For the FY 2016, there were 32 classes conducted at the aforementioned sites for 603 inmates (101 male and 502 female). Participants for each location were: 60 males -EHCC, 351 females - EBR Parish Prison, 145 females -LCIW, and 47 (41 male/6 female) at the Opelousas Police Department. The historic flood severely impacted the services provided to EHCC and LCIW, as inmates were and are still displaced

Results

-The program coordinator has been appointed by the state governor to serve on the Governor's Advisory Board of Juvenile Justice and Delinquency Prevention.
-About 603 inmates who attended the workshops/training sessions gained knowledge and learned how to handle anger and stress and how to write resumes and prepare for successful job interviews.
-More than 95 percent of the participants actually developed their resumes which they said will assist them with finding gainful employment once they are released from prison.
-Approximately 91 percent indicated that they will avoid stress and anger because the lessons they learned had actually given them facts to consider and be thankful for.
-The Second Chance 2 Recover (SC2R) Program has continued to provide prison-based services to inmates without federal or state funds. The SC2R Program expanded prison-based services to Caddo Parish and surrounding parishes. SU Ag Center conducted mock interviews with inmates who were preparing to return to their communities within 3-6 months.
-Impact reports of the project along with the graduation ceremonies of 603 inmates were publicized in various newspaper articles throughout the state. Blogs should be included as they are distributed through social media.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Louisiana experienced two floods in FY 2016 - one in the north by spring of 2016 and another in the south by fall 2016. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project. Some resources such as personnel, vehicles, etc. were reallocated and used to assist displaced citizens including youth. The state budget problems continued to impact negatively on our activities during the period and is seriously threatening the ability of Southern University Ag Center to meet federal match requirements.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

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%	14%	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%	31%	10%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	10%	20%	46%	20%
723	Hazards to Human Health and Safety	0%	0%	9%	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: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	4.0	3.0	6.0
Actual Paid	1.5	3.6	6.5	4.0
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**
69835	123630	237762	166254
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
69835	225219	237762	249611
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
281988	0	1471884	2280

V(D). Planned Program (Activity)

1. Brief description of the Activity

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 were used to teach producers, consumers, handlers and processors about strategies for keeping food safe. Specific certification trainings were Good Agricultural Practices (GAPs) and Good Handling Practices (GHPs), trainings that satisfy FSMA requirements, Sanitation Control Protocol (SCP), Seafood HACCP; Meat and Poultry HACCP; Vacuum Packaging HACCP, Better Process Control School (BPCS) and ServSafe.

Specific research and extension activities conducted during the FY 2016 were:

- Developed science-based food safety educational outreach programs in the form of GAPs/GHPs to provide Louisiana growers with the tools and resources they needed to make knowledgeable and profitable management decisions pertaining to the production of safe, healthy and nutritious fruits, vegetables and nuts.
- Collaborated and conducted research on food safety and 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.
- Hired additional experienced personnel on grant (soft) funds and built capacity to respond to clientele needs regarding food safety, one of them was the produce safety grant.
- Conducted certification trainings that satisfied FSMA requirements, Sanitation Control Protocol (SCP), Seafood HACCP; Meat and Poultry HACCP; Vacuum Packaging HACCP, Better Process Control School (BPCS) and ServSafe.
- Researched and disseminated research-based information on Pre- and Post-Harvesting (Animal and Plant) best practices as recognized by FSMA.

2. Brief description of the target audience

Growers, consumers, commercial seafood processors, children and food handlers including restaurateurs and food vendors were the target audience of this planned program and the activities. 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 processors as the primary means of reducing the prevalence of food borne illnesses originating during the production, packing and processing phases.

3. How was eXtension used?

We utilized eXtension in assisting our staff in delivering appropriate helpful information to clients. Louisiana, like any other states in the nation has individuals who are sports enthusiasts. Information from eXtension was useful to provide safety tips for outdoor food selection, preparation, serving and preservation. Producers also utilized information at pre and post harvest of commodities.

V(E). Planned Program (Outputs)

1. Standard output measures

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	29051	505853	847	0

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

Patent Applications Submitted

Year:	2016
Actual:	2

Patents listed
Starch-based Ingredient
An effective method for improving solubility of high molecular weight chitosan

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2016	Extension	Research	Total
Actual	2	47	49

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of individuals certified through food safety programs

Year	Actual

2016	324

Output #2

Output Measure

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

Year	Actual
2016	24

Output #3

Output Measure

- Number of Web page views

Year	Actual
2016	242939

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 and community levels.
2	Increase number of viable technologies to improve food safety
3	Increase adoption of recommended safe food handling practices at the production and supply system levels.

Outcome #1

1. Outcome Measures

Increase adoption of recommended safe food handling practices at the individual, family and community 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
2016	1097

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. This may be the result of increased consumption of fresh produce coupled with better understanding of pathogens and their capabilities to cause illness. The CDC estimates that each year roughly 1 out of 6 Americans (or 48 million people) gets sick, 128,000 are hospitalized, and 3,000 die from foodborne diseases. Outbreaks due to Salmonella and E-Coli contamination are constantly being reported especially when there is a large scale occurrence. 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 and served outside.

What has been done

Research scientists and extension personnel in the Nutrition and Health Program collaborated and worked with citizens of Louisiana to increase their understanding of the impacts of foodborne illnesses. The goal was to help citizens especially the farmers and food handlers, elderly, low income, educationally disadvantaged and poor families enhance their skills in proper food selection, storage and preparation. We conducted ServSafe training and certification for 82 individuals, Better Processing for School with certification for 210 handlers, Seafood HACCP training for 75 persons, GAP training for 320 persons, and held food safety seminars for 410

persons.

To ensure a sustainable and safe food, research and educational information was directed at producers, food businesses and food handlers. Research and extension staff provided nutritional instruction, food safety and food resource management workshops to the clientele throughout the state. To further our statewide activities, the collaboration between the Louisiana Department of Agriculture & Forestry, SU Ag Center, and LSU Ag Center produced a 5-year, $3.6 million grant to design a program in Louisiana to enhance produce safety.

Results

-We certified 82 individuals on the ServSafe program.
-Better Processing for School trained 210 food handlers.
-We trained 75 persons who acquired skills on the Seafood HACCP.
-GAP training was conducted for 320 farmers and producers and 410 persons gained food safety knowledge and skill through workshops and seminars.
-One hundred percent of the participants learned how to handle food safely to avoid contamination and also indicated that they will utilize information and knowledge gained. The success rate for receiving certificates has been 95-98%. Because of the outreach activities we have now reached more organizations with our food safety initiatives such as, university cafeteria staff, factory staff, restaurants (fast food and traditional), bakeries, grocery stores staff, hotels, hospitals, churches, extension agents, etc.
We also expect the new $3.6 million collaboration to result in:
-Increased on-farm food safety practices by small, medium and large producers.
-Enhance and encourage the safe production of fresh fruits and vegetables in the state.

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

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

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

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

As referenced in the overview, FY2016 was a particularly hard year for the state of Louisiana with four major flood events during the year. Significant resources were allocated to flood recovery efforts from early spring through September 2016.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

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%	14%	0%
204	Plant Product Quality and Utility (Preharvest)	0%	0%	7%	0%
205	Plant Management Systems	85%	0%	41%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%	7%	0%
212	Diseases and Nematodes Affecting Plants	5%	0%	8%	0%
213	Weeds Affecting Plants	5%	0%	8%	0%
405	Drainage and Irrigation Systems and Facilities	0%	0%	5%	0%
601	Economics of Agricultural Production and Farm Management	0%	0%	6%	0%
604	Marketing and Distribution Practices	0%	0%	4%	0%
	Total	100%	0%	100%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	10.0	0.0	14.0	0.0
Actual Paid	7.2	0.0	13.7	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
336831	0	501128	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
336831	0	501128	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
13600990	0	3102278	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Key horticulture program areas addressed issues related to home grounds; home, community and school gardens and ornamentals and turf. The Louisiana Master Gardener program provided volunteers to assist in addressing the growing needs of horticulture audiences and increased emphasis was placed on school and community gardening efforts. The Advanced Louisiana Master Gardener Program continued to be refined. The Louisiana Super Plants Program continued offerings to local horticulture professionals.

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

2. Brief description of the target audience

Target audiences included horticulture professionals, home gardeners, nursery industries, athletic field managers, Louisiana Master Gardener Volunteers and related agribusiness clientele.

3. How was eXtension used?

eXtension was widely used by faculty, staff and clients to find suggested solutions to problems, especially the emerging and new problems.

V(E). Planned Program (Outputs)

1. Standard output measures

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	205289	9200444	26677	0

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

Patent Applications Submitted

Year: 2016

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2016	Extension	Research	Total
Actual	5	55	60

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2016	1841489

Output #2

Output Measure

- Number of Louisiana Master Gardeners completing training series

Year	Actual
2016	383

Output #3

Output Measure

- Number of service hours contributed by all Louisiana Master Gardeners

Year	Actual
2016	113397

Output #4

Output Measure

- Number of individuals certified as Advanced Master Gardeners

Year	Actual
2016	71

Output #5

Output Measure

- Number of school gardens established

Year	Actual
2016	11

Output #6

Output Measure

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

Year	Actual
2016	37

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.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Increased adoption of recommended practices by commercial horticulture professionals and producers

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana's commercial ornamental horticulture industry is involved in the container yard, field and greenhouse wholesale production of ornamental crops, providing commercial and residential landscape design, maintenance and installation services, and retail selling of plants and related products to gardening consumers. There are approximately 500 nursery growers in Louisiana producing a wholesale farm gate value annually of around $120 million. There are 2500-3000 landscape firms in Louisiana providing an economic return of $800 million to 1.1 billion annually. Independent garden centers in Louisiana number around 300 with $500 -700 million in annual sales.

What has been done
Stakeholder input is obtained quarterly throughout the year at meetings jointed attended by LSU AgCenter faculty and representatives of the commercial ornamental horticulture industry. Clientele surveys are regularly conducted to obtain program input.

Major programs addressed currently include promotion and marketing of plant material (Louisiana Super Plants), plant variety and species production recommendations, best management

practices for irrigation and fertilization, pest identification and control, and improving efficiency and profitability by adopting other recommended production and maintenance practices.

Primary program delivery is accomplished by in-person attended educational programs, field days, farm visits, e-mail updates, web page development, social media, mass media (news articles, television, radio) and newsletters. Cooperative and collaborative efforts are maintained and are ongoing with the following: Louisiana Nursery and Landscape Association, Louisiana Turfgrass Association, Texas, Alabama, Mississippi and Arkansas landscape and nursery associations, and the state land grant universities in Texas, Arkansas, Alabama, and Mississippi. The Louisiana Super Plant program markets and recommends ornamental plants for landscape use, wholesale production and retail sales. A new program "Plants with Potential" was initiated to istribute to clientele hard to find ornamental plants with industry potential. The Get It Growing program primarily provides consumer education but also represents significant information delivery to nursery, landscape and garden center professionals. Multi-state effort is primarily with Texas, Arkansas, Alabama, and Mississippi.

Results

Based on 2016 surveys, commercial ornamental horticulture clientele adopted recommended practices at the following percentages: soil / growing media testing = 80%, insect/disease/weed scouting = 68%, production of new plants = 90%, maintained detailed crop records = 55% and plant marketing (adoption of Louisiana Super Plant program) = 60%. 15 Plants with Potential have been named and distributed. With the naming of additional plants for 2017 and 2018, there are now 41 Louisiana Super Plants. A social media posting on crape myrtle pruning (advocating correct measures instead of improper pruning methods) resulted in 243,000 contacts over a three week monitoring period. There were 147 comments on the post - 60% positive (agreeable with information), about 15% respondents disagreeing, and the remainder providing no opinion or indifference.

Nursery growers, landscapers and garden center owners, managers along with their employees are more aware of educational programs now offered by the Louisiana Cooperative Extension Service. As a result of these program efforts the following has been accomplished: (1) increased use of county agents, regional horticulturists, and the diagnostic along with soil lab for problem diagnosis and prevention, (2) introduction of new plant material, (3) promotion and marketing of highly recommended ornamental plants for Louisiana (4) increased industry awareness of environmental issues and sustainable production systems, and (5) water quality and irrigation management knowledge increase.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
213	Weeds Affecting Plants
601	Economics of Agricultural Production and Farm Management

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

As referenced in the overview, FY2016 was a particularly hard year for the state of Louisiana with four major flood events during the year. Significant resources were allocated to flood recovery efforts from early spring through September 2016.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

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%	9%	0%
601	Economics of Agricultural Production and Farm Management	0%	10%	10%	20%
602	Business Management, Finance, and Taxation	0%	50%	14%	0%
607	Consumer Economics	0%	10%	0%	10%
608	Community Resource Planning and Development	20%	20%	0%	65%
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%	9%	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%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	5.0	8.0	2.0	1.0
Actual Paid	3.3	6.4	2.1	2.5
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**
154448	250436	76815	154630
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
154448	230763	76815	132250
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
623652	0	475532	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 & Community 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 local farmers and other producers to develop alternative enterprise initiatives for rural businesses. Encouraged the development of agribusinesses to include utilization of niche markets (vegetables, organic products pasture-raised poultry and beef, ag tourism and eco-tourism, 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.
- Procurement conference was organized for business owners and potential business owners in collaboration with local, state and federal agencies.
- Building/enhancing coalitions for business development and expansion.
- Provided education and training for low skilled individuals to prepare them for the job market.
- Developed community leaders through the Building Opportunities through Leadership Development (BOLD) program. BOLD is a program designed to develop teams of emerging leaders in rural and underserved communities throughout Louisiana. The program continued to focus on providing community leaders with the tools to enhance their personal decision making, strategic planning and the use of modern and emerging technology.
- Stronger Economies Together (SET) enabled communities and parishes (counties) in rural America to work together in developing and implementing economic development blueprint for their multi-county region to address critical contemporary rural development issues impacting the well-being of people and

communities in the rural South.

Disaster Resilience and Sustainability - People-based

- Sustainable Housing / LaHouse, a program that educated homeowners and building industry professionals about building hazard-resistant, resource-efficient, healthy homes.
- Disaster Recovery and Mitigation which 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 including building code education.

Risk Appreciation (Awareness, Avoidance and Data Enhancement)

- Interactive, online hazard maps, a program that built hazard awareness by making information easily accessible while also providing same-page building-site information to the property owner, builder, and regulatory agencies.
- Sea Level Rise, Subsidence and Storm Surge, programs included storm surge and flood modeling that reflect projected conditions (sea level rise and subsidence) and the uncertainties of levee protection. The program was also used to detect inaccuracies in the modeling data for hazard forecasting and obtains better data to fill the gaps.

Disaster Resilience - Place-based

- 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.
- Agrosecurity Planning and hurricane and nuclear exercises were separate initiatives to protect Louisiana's agriculture from natural and technological hazards, including hurricanes, terrorism and accidental releases from nuclear power plants.

2. Brief description of the target audience

Target audiences for this initiative included: general public, elected officials, youth, emergency and floodplain managers, underserved populations, farmers, small business owners & governmental and non-governmental organizations.

- Hurricane, storm surge, sea level rise and financial disaster resilience focused on the southern third of the state (hurricane prone region).
- Sustainable housing, flood mitigation, hazard mapping, community resilience and agrosecurity were organized statewide.
- Housing and risk awareness programs targeted building and hazard management industry professionals (and their associations); their clientele and youth.
- Agrosecurity engaged producers of food commodities and agribusiness.
- The flood risk awareness and mitigation programs also had a national audience through service in the Association of State Floodplain Managers and Natural Hazard Mitigation Association.
- BOLD program targets rural leaders especially the underserved.

3. How was eXtension used?

State specialist served on leadership team of Home Energy eXtension site and conducted webinars for Extension agents nationwide. eXtension was used as resource by faculty, staff and clients to find suggested solutions to problems.

V(E). Planned Program (Outputs)

1. Standard output measures

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	24256	755159	5193	0

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

Patent Applications Submitted

Year: 2016

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2016	Extension	Research	Total
Actual	2	16	18

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2016	1969710

Output #2

Output Measure

- Number of LaHouse Resource Center visitors

Year	Actual
2016	2383

Output #3

Output Measure

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

Year	Actual
2016	1191

Output #4

Output Measure

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

Year	Actual
2016	1890

Output #5

Output Measure

- Number of LaHouse Facebook followers (Likes)

Year	Actual
2016	655

Output #6

Output Measure

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

Year	Actual
2016	7

Output #7

Output Measure

- Number of site-specific flood and wind risk determinations provided using the online "FloodMaps" portal

Year	Actual
2016	443007

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 and/or community growth.
2	Individuals, families, businesses, agricultural producers and community leaders 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
4	Increase in specification or recommendation of high performance building and retrofitting practices by professionals.

Outcome #1

1. Outcome Measures

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

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Individuals, families, businesses, agricultural producers and community leaders 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.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Data collected from community residents, business owners, faith-based leaders, community leaders and varying disciplines across the state of Louisiana revealed the need for leadership development and board training statewide. Louisiana citizens and communities suffered economically and socially as a result of hurricanes and oil spill; these factors had devastating impact on business expansion growth and investment. The state was ranked among the top five states for poverty and for the opportunities of mainstream America. Louisiana's poverty rate (17 percent) was higher than the national average (12 percent). Poverty rate in some rural Louisiana parishes (counties) was as high as 27 percent. Rural areas in Louisiana suffer greatly from the lack of access to education, access to broadband internet connectivity, adequate healthcare, and persistent poverty, and other resources. Many parishes (counties) developed individual strategic plans in hopes of attracting business and industry to their areas. What was lacking was the ability of these parishes to collaborate their strengths by coming together as a region to attract new businesses and industries. This project was developed to assist with this effort and piloted across selected states throughout the southern region of the U.S.

What has been done

In FY 2016 SU Ag Center faculty & staff continued the Building Opportunities through Leadership Development (BOLD) program by conducting sessions for selected community leaders across the state. BOLD was developed to train and build leaders who have the potential and desire to lead their communities but lack the skills to do such. We continued to utilize a webpage developed during the previous BOLD project to advertise and receive applications from potential participants and disseminate information to the general public at www.suagbold.org. A training manual developed in 2012 was used for educational training activities.

The following activities were conducted for all participants:

*10 sessions and two experiential learning field trips relating to emergency preparedness, community and economic development.

*Facilitated dialogue on how to build relationships among individuals in their parishes and state among persons in leadership positions.

*Classes, demonstrations and hands-on training on effective use of technology and social media in modern electronic social media communications.

*Leadership Styles Inventory Training on Leadership Development and Management.

*Community leadership development tours to New Orleans, LA to assess hurricane damage and emergency response techniques.

*Community leadership tours ? in and out of state to network with business and community leaders and learn about planning and implementation, risk and emergency response techniques, etc.

*Additionally, project personnel and volunteers implemented the following:

-Worked with community organizations to expose participants to local opportunities and results of serving in leadership roles.

Results

*In FY 2016, the program graduated eight participants. These participants were carefully selected and include faith-based, grassroots and aspiring leaders. In addition to the 29 participants who graduated from the previous grant cycle, this brought to 37 the total number of leaders who have graduated from this program, thus exceeding the goal of 30 projected for the grant cycle.

*These graduates are well equipped with new knowledge and skills that are of great benefit to improving the well-being of their communities.

*A website was developed; YouTube videos published; and other resources made available to other community leaders.

*Participants gained knowledge and skills from experts during the training sessions and are utilizing some of the information they obtained.

*A follow up survey of the previous graduates was conducted using Survey Monkey and some of the results are as follows:

As a result of BOLD participation:

*100 percent have tried new ideas that have yielded good results;

*94 percent have been able to increase personal leadership skills;

*100 percent have a better understanding and skills to develop strategic plans and community projects to benefit their communities;

*100 percent have sought and found new community, business development, or opportunities for network and collaboration;

*100 percent incorporated technology use in daily personal and community activities; and

*94 percent have improved their decision making through the use of technology.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Adoption of high performance building and retrofitting practices by consumers

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There is a clear link between housing and health. Many homes contain easily remedied health hazards, but most consumers have limited knowledge about these hazards, their effects and practical control practices. In particular, this area's warm-humid and rainy climate, natural hazards, high poverty and poor child welfare rankings, and the dominant use of natural gas for heat amplify and compound the prevalence and health risks of lead, mold, dust mites, pests, carbon monoxide, safety hazards and poor overall indoor air quality. Louisiana is in the top 25% of states for asthma related deaths, and one in ten households with children have a child with asthma.

What has been done
LCES and Miss. Extension educators were trained in 12 topics of the Healthy Homes Solutions curricula; consumer publications, flipchart lessons, and bi-monthly national newsletter for educators and collaborators were produced and provided to agents; La.HH Coalition was engaged; 4 outreach educators were hired; in 2016 over 300 educational events were attended by 6,000; LaHouse provided RRP Lead-safe, Mold Remediation and flood restoration training to 650 contractors; 70 social media posts on HH topics (including flood) reach totaled 100,000. Over 6,000 learned about healthy home (HH) hazards and actions they can take; 100 contractors are EPA certified to do lead-safe renovation; 70 contractors are eligible for La. mold remediation license; 480 contractors gained other HH knowledge.

Results

Impact survey of early HH audience sample had 50 respondents. Over 70% conducted healthy home assessments, took actions to address risks and used educational resources provided. Moreover, 88% shared what they learned with an average of 29 others. There was a high level of adoption (>3.5 on a 5-point Likert scale of frequency) for: 6 of 8 indoor air quality actions on the survey, 5 of 7 lead poison prevention actions, all 7 asthma and allergy trigger control actions, all 5 mold and moisture control practices, 3 of 5 combustion pollution prevention actions, all 6 home safety practices, 5 of 6 hazardous household product safe use practices, all 8 integrated pest management practices, and 6 of 7 healthy home energy improvements. Among the most critical impacts as a result of the program are: 2/3 of audience usually or always use lead-safe cleaning methods; 89% do not allow smoking indoors, 81% use IPM, 78% use allergy-safe bedding and 69% use HEPA vacuum cleaners for asthma and allergy trigger reduction; 80% inspect for mold and dampness, 71% corrected moisture problems and 68% use exhaust fans to prevent mold hazards; 55% keep grills and generators 10 feet from openings and 41% have CO alarms; >80% adopted fall, scald and poison prevention practices and maintain working smoke alarms; >80% adopted ALL IPM practices to control pests without toxic sprays and fogs; and >75% adopted various energy improvements that avoid CO poisoning, lead, moisture, mold and other health hazards.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment
607	Consumer Economics
723	Hazards to Human Health and Safety
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
903	Communication, Education, and Information Delivery

Outcome #4

1. Outcome Measures

Increase in specification or recommendation of high performance building and retrofitting practices by professionals.

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

As referenced in the overview, FY 2016 was a particularly hard year for the state of Louisiana with four major flood events during the year. Significant resources were allocated to flood recovery efforts from early spring through September 2016. In this initiative area, we had increased contacts as a result of our disaster mitigation work. Particularly, the flood maps portal received tremendous exposure following the flood events. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project. Some resources such as personnel, were used to assist displaced citizens including youth. The state budget problems continued to impact negatively on our activities during the period and is seriously threatening the ability of Southern University Ag Center to meet Federal match requirements.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Floods have directly or indirectly affected almost everyone in Louisiana. Between 1980 and 2009 Louisiana experienced an average of 91 flood related deaths (National Weather Service (NWS) and the NCDC). In 2011, the state experienced 8.73 billion dollars in losses and 108 flood related deaths. Flooding continues to be a significant threat across Louisiana because of climate change and coastal erosion. These factors drastically increase the likelihood of flooding in Louisiana. Many of Louisiana's parishes have experienced flooding at least once every six months. According to Peek (2008), children are among the most physically and psychologically vulnerable to disaster events. Additionally, disasters often cause disruptions or delays in their children's educational progress. Although disasters leave financial burdens and emotional distress on citizens, it offers opportunities to foster a culture of preparedness. The best way we can save lives and reduce economic loss and property damage is by understanding disaster risks and taking actions to mitigate those risks. Children along with parents have the capacity to contribute to disaster preparedness, response, and recovery activities (Peek, 2008).

Building upon a successful 2011 Resilient Vermilion project led by 4-H and Sea Grant agents, a collaborative faculty team from LSU Agricultural Biological and Agricultural Engineering and Construction Management departments in the College of Engineering focused on Louisiana hazard mitigation designed a unique course for youth in hazard mitigation to promote greater understanding of the vulnerabilities and risks association with natural disasters. Lesson plans and class activities allowed youth to learn strategies in

reducing disaster losses through hazard mitigation. 4-H youth grades 8-12 were involved in service-learning projects in which they identified and evaluated potential mitigations projects to be implement in local public facilities. Three parish teams and a statewide team were selected to participate in the Youth Mitigation Project. Each parish 4-H Adaptation Team (A-Team) completed an official FEMA hazard migration grant proposal after identifying a local vulnerable public facility, conducting an assessment, and developing a plan to lessen the structure's weaknesses based on strategies learned. Each A-Team presented their findings to local officials and reflected on the process through creative development of educational media pieces, such as; videos, public service announcements, and printed outreach cards.

The Youth Mitigation Program (YMP) has been proven effective in preparing participants in assessing natural disaster risks, planning, and taking actions to mitigate these risks. The program increased awareness about which community officials to contact in case of disasters and enhanced trust and comfort between the participants and community officials. 43.6% of participants agreed that they know which community officials to contact for assistance in case of disasters. Additionally, the participants felt empowered to take actions such as seeking to be more knowledgeable about disasters, participating in or leading discussions on how to reduce disaster impacts, assisting their community in reducing disaster impacts that would mitigate the effects of incoming natural disasters. In total, 33.8% of participants agreed that they felt empowered after being trained on hazard mitigation by the YMP. The latter also enhanced the participants' team building skills. Nearly fifty-eight percent (57.6%) of the participants strongly agreed that the program impacted the way they work together as a team towards a common goal for the common good. Participants felt that their personal contributions (68.2% strongly agreed) as well as team contributions (47.0% of strongly agreed) were valued. They were strongly confident (50%) about their disaster risk assessment skills. Sixty one percent of participants perceived disasters as a threat to their communities and homes. As a result, forty-five percent of the participants strongly agreed to continue preparing for natural hazards. These results indicate that the youth mitigation program enhanced the participant's capacity of resiliency to natural disasters.

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%	7%	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%	5%	0%
511	New and Improved Non-Food Products and Processes	0%	10%	35%	10%
512	Quality Maintenance in Storing and Marketing Non-Food Products	25%	10%	5%	10%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	1.0	5.0	6.0
Actual Paid	0.2	1.2	5.1	3.5
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**
10232	83260	186551	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
10232	77179	186551	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
41314	0	1154863	0

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.
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. Worked to empower 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 to 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. Provided 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 included 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 targeted 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?

As part of the USDA-AFRI Biofuels grant, information was provided to eXtension about the production of high fiber sugarcane (energycane) and sweet sorghum. This information is in the "Feedstocks for Biofuel Production" under the topic "Farm Energy: Feedstocks and Energy Crops".

V(E). Planned Program (Outputs)

1. Standard output measures

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	6506	46977	155	0

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

Patent Applications Submitted

Year:	2016
Actual:	2

Patents listed

System and method for rapid biomass pyrolysis and bio-oil updrading into drop-in fuels
Bioplastics Made From Sugar Cane By-Products

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2016	Extension	Research	Total
Actual	3	29	32

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2016	202398

Output #2

Output Measure

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

Year	Actual
2016	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Extension faculty and research scientists increase knowledge regarding feedstock generation, biofuel production and the overall biofuel chain
2	Implementation of sustainable biofuels systems
3	Farmers, processors and potential feedstock producers increase their knowledge regarding the use of agricultural feedstocks to generate biofuels.

Outcome #1

1. Outcome Measures

Extension faculty and research scientists increase knowledge regarding feedstock generation, biofuel production and the overall biofuel 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
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Long-term rising costs production costs, transportation fuels, dependence on foreign resources and concern that fossil fuels adversely affect climate have stimulated interest in renewable fuels. Instability and price unpredictability of oil have caused volatility in the US and World economic climate. There are multiple renewable energy resources (wind, solar, hydro, etc.) but, the only viable renewable source of transportation fuels that will not affect food, feed, and fiber production, supported by the government is plant biomass. Louisiana is rich in natural resources such as forestry and other sources suitable for consideration as bioenergy feedstocks. The climate is also highly adaptable to growth of highly productive to non-food feedstocks which could serve as energy sources such as urban wood wastes and cane biomass. Development of methodologies and technologies for the utilization of such natural resources for the purpose of energy is an important priority for our country's energy-based economy. Additionally, there is need to develop screening strategies to understand trees tolerance to changing environmental conditions and the development of new technologies to improve forest health and resistance to pest.

What has been done
Through collaboration between the SU and LSU Ag Centers, we worked on a research grant to develop biofuels from sustainable alternative non-food feedstocks by quantifying urban forest wood waste biomass potential availability for biofuel production in Louisiana. We also characterized dielectric properties of biomass important in microwave heating, processed energy cane and various types of urban forest waste biomass with solvents and catalysts into high-quality bio-oil via exposure to electromagnetic fields, and quantified the performance of the microwave-assisted liquefaction of urban forestry biomass on the bio-oil, char, gas, and water

yields and quality. Undergraduate and graduate students from both SU and LSU were involved in the study and some of the graduate students developed their master's thesis and doctoral dissertation and journal publications from this study. Two workshops were organized with 140 people in attendance to provide research-based information to interested residents of Louisiana about biofuel production and use.

Results

-As a result of the project, SU Ag Center scientists were able to continue their collaboration with scientists from other institutions - USDA/Forestry Service, ISA, SAF, Louisiana Department of Environmental Quality (LA DEQ), the Louisiana Department of Agriculture & Forestry (LA DA&F), the Gulf Coast Cooperative Ecosystem Studies Unit (GC-CESU), LSU AgCenter, and the City of Baton Rouge, LA., etc.
-A research symposium and one workshop were conducted on bioenergy and biofuel production in collaboration with the LSU Ag Center and E-Fuel Corporation.
-Graduate and undergraduate students gained knowledge and skill through their involvement in biofuel research and scientific publications.
- Farmers in St. Landry Parish (County), Louisiana are continuing to produce and use biofuel as a source of energy.
-There is greater potential that more farmers, producers and businesses will adopt the production and use biofuel as a source of energy.

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

Outcome #3

1. **Outcome Measures**

Farmers, processors and potential feedstock producers increase their knowledge regarding the use of agricultural feedstocks to generate biofuels.

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

As referenced in the overview, FY2016 was a particularly hard year for the state of Louisiana with four major flood events during the year. Significant resources were allocated to flood recovery efforts from early spring through September 2016.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

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: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	48.0	8.0	0.0	0.5
Actual Paid	31.6	8.5	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.5

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
1474650	501794	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1474650	303591	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
5954531	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

Science and Technology End entrepreneurship (SU AgCenter). Programs focused on the development of four essential elements in youth--belonging, independence, mastery and generosity. In this state, 4-H continued 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 were emphasized. Youth received guidance 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 Ag Center'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.
- Conducted 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.
- Worked to empower youth to develop and make positive choices as good citizens.

2. Brief description of the target audience

This program targets 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 were placed at risk because their families survive on low income and limited resources. They lacked 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 lived in poverty. Poverty rates were 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 were also targeted. Additionally, children and adolescents who were placed at risk, those who were potentially at risk and children who needed various forms of mentoring also benefited. Program staff and volunteers were trained to ensure effective and efficient delivery of information.

3. How was eXtension used?

We utilized eXtension widely as a resource for faculty, staff and clients - it was recommended for youth to visit the eXtension homepage to find suggested solutions to problems.

V(E). Planned Program (Outputs)

1. Standard output measures

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	230568	1471095	643439	1231776

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

Patent Applications Submitted

Year:	2016
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2016	Extension	Research	Total
Actual	5	0	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2016	1280816

Output #2

Output Measure

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

Year	Actual
2016	0

Output #3

Output Measure

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

Year	Actual
2016	129

Output #4

Output Measure

- Number of youth engaged in service projects

Year	Actual

2016	31482

Output #5

Output Measure

- Number of hours of service performed by youth

Year	Actual
2016	17598

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
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana youth, like their counterparts in other American states face series of problems including: lack of access to health and mental health care; child abuse and neglect; failing schools; "zero tolerance" school discipline policies; tougher sentencing guidelines for drugs and violence, racial and economic disparities; a lack of positive role models and a culture that glorifies excessive consumption violence and triviality. Louisiana's urban and rural youth lacked adequate enrichment programs which focused on developing good citizenry, life skills, agricultural skills, social skills, and academic enhancement. An estimated 15.5 million youth or 55 percent of youth ages 12 to 18 participate in volunteer activities; the teen volunteering rate is nearly twice the adult volunteering rate of 29 percent (Youth Helping America by AmeriCorps). Youth are continuing to experience the benefits of being involved in civic, cultural, economic and social projects. African-American youth are not as fortunate in experiencing these exposures compared to their white counterparts. As future leaders, to be able to participate effectively in governance, they need more exposure to the political process at national, state and local levels.

What has been done
SU Ag Center faculty and staff collaborated to receive grants to organize local, statewide and national exposure for youth. We designed activities that brought together the extension agents, teachers, students, parents and community supporters. These activities provided opportunity for the youth of Louisiana to develop high self esteem, leadership skills, and entrepreneurship skills. Parish (County) family and youth exposition culminated in the State Annual Youth Exposition where the youth competed in public speaking, quiz bowl, talent shows, etc. which exposed them to the political, scientific, athletic, religious and international events and personalities. Another activity was the selection of six participants each year to travel to Washington, DC to expose them

to experiences in national level political processes. Funds for this trip were provided in the form of scholarships to participants from Farm Credit, by paying for registration, lodging, meals, and travel. In FY 2016, six youth participated and in the past three years, 18 youth have participated and gained a wealth of knowledge and understanding of the US government. The one week trip usually includes visits to Congress, the White House, Federal Government Departments, Museums, and other valuable learning sites in Washington, D.C.

Results

*100 percent of youth who participated indicated that they gained knowledge and understanding of the functioning of the United States Government.
*100 percent of the participants said the exposure was a lifetime experience and that they have shared their knowledge with their peers.
*95 percent of youth participants said that the experiences gained have motivated them to improve their academic performance with the hope of serving in government.
*100 percent of youth who participated indicated that they were encouraged to develop leadership skills.
*100 percent of the youth participants developed greater appreciation for the government workers and members of the legislature.
*The SU Ag Center expanded collaboration with entities and receive additional grants for $115,000 to assist in youth development activities.
*Faculty and staff expanded outreach via social media to reach youth using, Twitter, Facebook, Blog and other electronic messaging techniques.
*In addition, 8 adult volunteers assisted during the experiential learning tours donating a total of 1,920 hours of their time (approximately $25,000).

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.

Not Reporting on this Outcome Measure

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 Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2016	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Volunteers play a vital role in the Louisiana 4-H Youth Development Program. They develop and deliver programs, serve as overnight chaperones, and sit on advisory councils and foundation boards. Over the last five years, the LSU AgCenter has been impacted by shortfalls in state revenue, leading to multiple budget reductions and downsizing of personnel and services provided to the public. With decreases in the LSU AgCenter's state-funded operating budget eliminating many full-time equivalent positions including youth development workers, the support of trained volunteers is critical in continuing to deliver the Louisiana 4-H Youth Development program.

What has been done
The Louisiana 4-H Overnight Chaperone Program has four components. A background screening process ensures that adults are free from background concerns. A 3-hour training covers youth development principles, discipline, youth and adult protection, health and safety, and crisis management. A job description ensures that volunteers understand their responsibilities. A code of conduct form reinforces that volunteers understand the behavioral expectations of them in their roles as overnight chaperones. During the 2015-2016 4-H year, 1,201 adult volunteers were trained as overnight chaperones and 165 served as overnight chaperones for 4-H Summer Camp. This was a 6% increase from last year. 964 youth volunteers were trained as camp counselors and 350 served as camp counselors for 4-H Summer. In total, 6,866 adult and 2072 youth enrolled as volunteers. Over 350 volunteers attended regional trainings held in the five regions. 36 adult volunteers attended the 2016 Louisiana 4-H Volunteer Conference and Awards Luncheon at Camp Grant Walker.

Results
As a result of the Louisiana 4-H Overnight Chaperone Program, 98% of the participants gained information on how to create a positive environment for youth. 95% felt more comfortable handling discipline problems. Ninety-five percent of participants increased their knowledge of the signs of child abuse and 93% increased their knowledge of child abuse types. In promoting safe environments, 97% of the participants increased their understanding of how to maintain safe environments for youth, while 96% increased their understanding of how to protect adults in overnight situations. Ninety-six percent of participants were more aware of health and safety considerations in overnight settings. Ninety-five percent felt more comfortable handling crisis

situations and felt more prepared to handle emergency situations.

When it came to discipline, 94% understood that rules should be enforceable, limited, and set an expectation for behavior, while 81% understood that children misbehave because they want power, attention, or revenge or because they feel inadequate. In adult protection, 88% of the participants understood they should avoid any one-on-one contact with youth. With child protection, 90% of the participants knew that empty facial expressions, impaired sense of self and conduct disorders were signs of emotional abuse. In dealing with medical situations, 95% of the participants knew that all emergency actions and medical treatment should be kept in medical log, while 77% identified the role of all non-medically trained personnel was to help clear the area when an emergency occurs.

The economic value of the 165 adult volunteers who donated 15,840 hours of their time as overnight chaperones at summer camp was $373,190.40, and the value of the 350 youth volunteers who donated 33,600 hours of their time was $791,616.00.

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

As referenced in the overview, FY 2016 was a particularly hard year for the state of Louisiana with four major flood events during the year. Significant resources were allocated to flood recovery efforts from early spring through September 2016. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project. Some resources such as personnel, were reallocated to assist displaced citizens including youth. The state budget problems continued to impact negatively on our activities during the period and is seriously threatening the ability of Southern University Ag Center to meet Federal match requirements.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

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.