2017 Southern University and A&M College and Louisiana State University Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

The fiscal year 2017 report is a combined report of the LSU Agricultural Center (LSU AgCenter) and the Southern University Agricultural Land Grant Campus (SUALGC). The LSU AgCenter and the SU ALGC 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 Ag Land Grant Campus 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. In addition to the Baton Rouge location, the LSU AgCenter maintains a statewide presence through 64 parish extension offices (one /parish); 5 research extension, education centers; and 12 research stations. The LSU System has a new LSU Strategic Plan 2025 of which the LSU AgCenter is an integral part. The core challenges addressed by the plan include advancing arts and culture; bridging the coast, energy, and environment; fostering research and catalyzing research and development; improving health and wellbeing; transforming education; and developing leaders. A recent economic impact study of the value of the LSU System to the state of Louisiana indicated that the LSU AgCenter contributes nearly $230 million dollars in economic activity to the state.

In FY2017, approximately 12.76% of the LSU AgCenter's overall budget was provided by federal funds; 54.74% by state funds and 37.76% by self-generated funds, grants, contracts and gifts. Limited resources at all levels have made it challenging to maintain vital LSU AgCenter programs. State budget cuts exceeding 18% since 2008 have significantly affected programs jointly funded with state and federal dollars.

The Southern University Agricultural Land Grant Campus is one of five campuses in the Southern University System. The campus consists of the SU Ag Center and the College of Agriculture, Family and Consumer Sciences. 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). SUALGC still experienced budget reductions in FY 2017, however, the severity was not as harsh as was the case for nine years prior to FY 2017. Between FY 2008 thru FY 2016, we endured severe budget cuts with special onetime increase in 2013. State funding for the land-grant mission has been reduced by about 50 percent since 2008. In FY 2017, over 50% of the SU Ag Land Grant Campus research and extension operational budget was from federal appropriations and the remaining less than 50% by state funds.

These funding proportions put the SU Land Grant Campus at risk of not meeting the 1:1 match. We are strongly requesting the State for increase in our Land Grant funds during the 2018 Louisiana Legislative Session. Projections indicate that the State is facing nearly $1 billion budget shortfall. Unless alternative sources of revenue for the state are approved, state budget problems are expected to get even worse in FY 2018 and beyond. Loss of employees and the uncertainty of replacing them were some of the consequences of state budget reductions. Other effects of state budget cuts 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 SUALGC's faculty and staff applied for and received ten external grants and contracts for about $3.3 million to conduct research and extension activities and provide research-based educational information and services to residents throughout the state.

Our general goal of developing and implementing programs and activities in research and extension at the SUALGC is to have a positive impact on alleviating poverty among low income, limited resource and underserved citizens of the State. It was with this goal in mind that the Sothern University System governing board implemented a reorganization plan and SU Ag Center combined with the College of Agricultural, Family and Consumer Sciences (CAFCS) to become the Southern University Land Grant Campus. Dr. Bobby R. Phills was named as the new Chancellor-Dean for the Land Grant Campus. There are three vice chancellor for the tripartite functions - research, extension and teaching. The SUALGC has faculty and staff located in 34 of 64 parishes (counties). External grants and contracts allow the SUALGC to have a presence in all 54 parishes of the state. Our future plan is to locate staff and have a presence in all 64 parishes of Louisiana.

Despite budget/funding problems, we made significant strides in addressing critical issues facing Louisiana residents. Since North Baton Rouge (where Southern University is located) is classified as "Food Desert"; in FY 2017, three program areas of research and extension (Sustainable Agriculture, Youth, and Nutrition/Health) collaborated to establish five community gardens. These gardens involved 450 youth in schools and communities across the area. They produced tomatoes, cucumbers, mint, sunflowers, hibiscus, eggplant, melon, and okra in the spring and cabbage, kale, broccoli, cauliflower, strawberries, mustard greens, and collards in the fall. All together, these communities generated farm produce worth about $15,000. In addition, with the assistance of our SUALGC staff, 51 community gardens were established across the state mostly in areas classified as food deserts.

Apart from providing nutrition benefits through increased access to fruits and vegetables for consumption, the community gardens also provided educational environmental benefits. Other benefits include: families working together, physical activity to ensure fitness and health, etc. Since some of the gardens are located on prison grounds and homeless shelter, we have used them to provide gardening skills to homeless and incarcerated youth and adults.

Physical activity from gardening helped participants stay healthy. One significant gain from gardening is that it provided a medium to exercise not only the body, but also the mind. This engagement did not only help reduce incidents of obesity, it also saved families and governments millions of dollars in healthcare-related costs.
Nutrition and health program reached 89,752 persons including 45 school sites and 30 social service sites. About 41 growing healthy sites were active during the period, and 13 statewide Cooking Healthy and Enjoyable Foods (C.H.E.F.) camps were conducted for youth.
Survey results showed that 60% of the participants increased their food selection preparation skills for healthy food. Also, 86% increased their nutrition knowledge and 90% increased their kitchen and food safety knowledge.
A workshop was conducted for youth participants at the SUALGC satellite campus Sustainable Agriculture and Rural Development Institute (SARDI) for youth participants during our summer program and 90% of the participants leaned about biofuel for the first time while 98% said they gained new knowledge of biofuel production.

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 Presidents/Program Leaders provide oversight of programmatic efforts for both Extension and Research. This structure allows for coordinated and integrated programming across the organization. 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 direct to develop focused programs and address the state's most critical needs.

In FY 2017, we continued to assist Louisiana residents who were recovering from the Historic Floods of 2016 which affected all parts of the state. The LSU AgCenter and SU Ag Land Grant Campus 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.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	265.0	38.0	120.0	38.5
Actual	215.5	36.5	0.0	36.1

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

Strategies for conducting program reviews on a regular scheduled basis were identified, evaluated and implemented. Review comments were solicited from peer scientists and state extension specialists. During the year, we requested USDA/ARS to assist in reviewing research and extension proposal some of which we were seeking partnership/collaboration. 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. In 2017, the LSU AgCenter sought information from Louisiana Master Gardeners, members of the Louisiana Nursery and Landscape Association, and Louisiana Fruit and Vegetable Growers Association about specific changes that were needed to the state horticulture program. Internal groups made up of multi-disciplinary faculty provided review and focusing of statewide research and extension efforts. An internal Horticulture Extension Committee was established to assess publication needs. Both Southern University and LSU Agricultural Centers conducted program reviews to assess program effectiveness and to establish program priorities.

As a result of the FY2017 needs assessment process conducted with stakeholders in the horticulture program, a need to update information associated with variety tests was identified. In response to this need, variety trials with home owners have been established around the state and a brand new variety trial has been added at the Northeast Research Station. As part of the internal Horticulture Extension Committee needs assessment process, Extension publications have been targeted for updates and modifications. Two changes have been prioritized: 1) simplifying documents for electronic viewing, particularly on mobile platforms and 2) creating educational videos of strategies related to weed control, variety selection, and insect management.

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.

In FY 2017, multiple methods were used to seek input from all stakeholders in a fair and impartial manner that allowed all participants equal participation. 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 press release, flyer, email, newspaper, radio, Websites, Twitter, YouTube and blogs. Stakeholders were encouraged to attend as they were able. To satisfy ADA stipulations, 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 could not 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.

Several 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 staff identify individuals and groups which have interest in guiding programming. Advisory committee members were a great help in identifying other stakeholders. The key was ensuring that individual stakeholders represented 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 of diverse racial, ethnic, gender, educational, etc. backgrounds 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 survey tools. Advisory committee meetings with traditional and non-traditional stakeholder groups continued to be used more frequently. Surveys of both traditional and nontraditional stakeholder groups were used to gather such input. Utilizing Web-based survey tools became another method-of-choice to collect input from stakeholders who could not always participate in meetings. Occasionally, focus groups and meetings with key individuals in a community were used to collect 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 continued to involve assisting faculty and staff 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. Issues requiring research attention were directed to the program area through already established channel.

Due to the ongoing economic climate, stakeholder input was also 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 and/or other natural disaster, we also redirected resources to address the immediate needs of Louisiana residents. For instance, based on input, we have continued to assist families and individuals affected by the flood in areas such as food safety, housing, establishing gardens, rehabilitating farms and businesses, etc. 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 were important variables in the process of planning for future program focus and prioritization of faculty positions.

Brief Explanation of what you learned from your Stakeholders

Through interaction and evaluation, our stakeholders have asked us to focus on the following issues:

• Multiplying and ensuring quality agricultural productivity (yields and quality) 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.
• 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 and other natural resource issues.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{No Data Entered}	{No Data Entered}	{No Data Entered}	{No Data Entered}

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	4387351	1710473	3610514	2045413
Actual Matching	4387351	1710473	3610514	2045413
Actual All Other	13066632	0	42217235	8795
Total Actual Expended	21841334	3420946	49438263	4099621

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%	17%	0%
502	New and Improved Food Products	0%	0%	15%	0%
503	Quality Maintenance in Storing and Marketing Food Products	0%	0%	5%	0%
701	Nutrient Composition of Food	0%	5%	5%	10%
702	Requirements and Function of Nutrients and Other Food Components	0%	5%	19%	10%
703	Nutrition Education and Behavior	50%	40%	18%	30%
704	Nutrition and Hunger in the Population	0%	0%	5%	0%
724	Healthy Lifestyle	50%	50%	16%	50%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	12.0	5.0	4.0	3.0
Actual Paid	11.3	4.0	2.1	2.2
Actual Volunteer	0.0	0.6	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**
563102	167624	66626	132657
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
563102	232847	66626	145699
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1677059	0	764201	0

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.

• EFNEP and SNAP-Ed programs jointly implemented by both SU and LSU 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." Several billboards were acquired and used all over the state to promote these programs. In addition, television spots were purchased to advertise the work and activities of EFNEP and SNAP-Ed.

• The 4-H Healthy Living initiative that was related to Childhood Obesity 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, Creating Healthy Enjoyable Foods (CHEF) Camp, food and fitness boards at the state and local levels, and special interest workshops and day camps.

• Youth gardening activities continued and youth participants benefited from learning new techniques about gardening, which helped youth achieve the following: increased nutritional awareness through research and outreach, assisted with lowering the obesity rate, saved money in low-income households, increased leadership development skills and self-esteem among youth, increased environmental stewardship, and decreased 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 to manage this effort greatly impacted its success.

2. Brief description of the target audience

The target audience for the childhood obesity programs included public and private elementary schools in Louisiana, students in grades K-12 with emphasis on limited income youth, and adults who care for children. 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 consisted of 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

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	54968	767571	146521	0

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

Patent Applications Submitted

Year: 2017

Actual: 2

Patents listed

Witoon AG-2014-36-02

Losso AG-2016-054-02

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	6	17	23

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2017	40425

Output #2

Output Measure

- Number of youth who participate in Smart Bodies Program
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of elementary schools participating in Smart Bodies program
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

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

Year	Actual
2017	20

Output #5

Output Measure

- Number of educational program activities

Year	Actual
2017	9901

Output #6

Output Measure

- Number of USDA published materials distributed

Year	Actual
2017	78

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

Not Reporting on this Outcome Measure

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.

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
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
A major challenge faced by low-income Louisiana families is obesity which continues to grow as a severe epidemic. It cuts across race, ethnicity, income group and location. Obesity rates have tripled in the past 30 years, a trend that means, for the first time in U.S. history, American children may face a shorter life expectancy than their parents (A Healthier America, 2016). The percentage of overweight or obese children aged 6-11 years in the United States increased from

7% in 1980 to nearly 18% in 2012 (CDC, 2016). More than one-third of children and adolescents were overweight or obese; overweight was defined as having excess body weight for a particular height from fat, muscle, bone, water or a combination of these factors; obese was defined as having excess body fat (CDC, 2016). Consequently, childhood obesity is now the number one health concern among parents in the United States (Heart.Org, 2015). Because of childhood obesity, children today now suffer from diseases that were previously only seen in adults. These include high blood pressure, type 2 diabetes and cardiovascular diseases. They are also at greater risk for bone and joint problems and sleep apnea (CDC, 2016).

Recent data on childhood obesity in Louisiana are alarming and reveal that 39.8% of children are considered either overweight or obese compared to 18% nationally (National Initiative for Children's Healthcare Quality, 2012). Louisiana has the 6th highest childhood obesity rate in the nation and the state's cost of childhood obesity associated illness increased from $35 million to $127 million over the past two decades, which equates to a 263% increase (Louisiana State University, 2015).

What has been done

Southern University Ag Center's Nutrition Education program provided services to state residents in 15 parishes (counties) where there were a higher concentration of poverty:

Important areas of emphasis were:
-Diet quality and physical activity
-Food Resource Management
-Food Safety
-Food Security

Key educational messages were:
-Eat fruits and vegetables, whole grains, and nonfat or low-fat milk or milk products every day.
-Be physically active every day as part of a healthy lifestyle.
-Balance calorie intake from foods and beverages with calories expended.
-Gardening as a means of healthy eating, food security and physical activity.
-45 School Sites
-13 Statewide Youth C.H.EF. Camps
-30 Social Service Sites
-41 Growing Healthy Gardening Sites
-31% Increase in SNAP- Ed Sites who have made positive Policy, Systems and Environmental (PSE) Changes
-23 Newly Established Community Partnerships
-12.5% increase in Programmatic Reach statewide in WIC sites.

In addition to regularly scheduled programing we also have two initiatives our Cooking Healthy Enjoyable Foods Camp (Youth C.H.E.F Camp) which targets youth ages 9-15 and our Growing Healthy Initiative which is a gardening initiative for youth, adults, and seniors. For fiscal year 2017 we held a total of 13 youth camps across the state and planted a total of 22 new gardens.

Results

We created a website (Nutritionally Yours), Twitter and Instagram accounts to disseminate additional information to our residents. We also developed an App to help our citizens search for and download useful tips on smart shopping, physical activity, healthy recipes, etc.
A total of 8,990 enrolled participants were enrolled and 89,752 contacts through direct education,

indirect education, social media and billboards. The EFNEP program had 255 enrolled adults and 4,954 enrolled youth. Pre-and-posttest evaluation data indicated that 82% of all participants (youth, adults and seniors) made at least one positive change in healthy eating behavior or physical activity.

Two initiatives: Cooking Healthy Enjoyable Foods Camp (Youth C.H.E.F Camp) which targets youth ages 9-15 and our Growing Healthy Initiative which is a gardening initiative for youth, adults, and seniors. For fiscal year 2017 we held a total of 13 Youth CHEF Camps across the state and planted a total of 22 new gardens. Other accomplishments were:
-Establishment of initiatives in 45 school Sites
-23 Newly Established Community Partnership

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

As mentioned in the overview, the state of Louisiana continued to grapple with the aftermath of the four major flood events of 2016 which caused very significant negative impacts in the life of citizens. In FY 2017, we continued to devote substantial amount of resources to assist in flood recovery efforts. Some resources such as personnel, were used to assist displaced citizens including youth. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project especially during the first half of the year. Some individuals and families are still struggling to complete the rebuilding of their homes.
The state budget problems continued to impact negatively on our ability to implement planned activities during the period and truly caused Southern University to be unable to meet federal mandatory match requirements.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Animal studies exploring the effects of diet on chronic disease are the foundation of our

understanding of how dietary changes can affect chronic disease in humans. Given the relationships between obesity and chronic disease it is crucial to conduct animal studies that may one day inform both human research and educational programs that address the childhood obesity issue.
The purpose of this research study was to examine the beneficial health effects of high-amylose maize resistant starch type 2 (HAMRS2) in Zucker diabetic fatty (ZDF) rats, a model that develops insulin resistance and type 2 diabetes. Two questions guided the study: 1) will ZDF rats ferment HAMRS2, and if they ferment the HAMRS2 2) will ZDF rats respond to fermentation with phenotypic changes such as improved insulin sensitivity and reduced body fat. In this study, whole-grain versions of control starch and HAMRS2 were included for the first time. There were four diet groups: 1) no HAMRS2 control, 2) whole-grain low HAMRS2 control, 3) high HAMRS2, and 4) whole-grain high HAMRS2.
Both groups fed high levels of HAMRS2 had greater fermentation in their ceca, but the whole-grain high HAMRS2 had the greatest amount of fermentation. During the study, it appeared that fermentation of HAMRS2 was not occurring as the ZDF rats were not passing any soft stools, which was different from previous observations in other strains of rats. An increased amount of plasma active glucagon-like peptide 1 in the two groups fed high levels of HAMRS2 was observed, but there was no increase in insulin sensitivity or no decrease in body fat. Results of the DNA sequencing of the bacteria (microbiota) in the ceca of the ZDF rats suggest that as the level of fermentation of HAMRS2 increased there was a significant change in the microbiota. ZDF rats have a defective leptin receptor, which means they do not respond to the leptin produced by their body fat. Thus, their genotype appears to prevent them from responding to fermentation with phenotypic changes, increased insulin sensitivity and reduced body fat, that have been previously observed in other strains of rats or strains of mice.

Results with the microbiota analysis demonstrate that, although the literature reports that the microbiota can have a powerful effect on the host organism, strong genetics can override health effects of the microbiota.

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%	5%	0%
111	Conservation and Efficient Use of Water	0%	0%	5%	0%
112	Watershed Protection and Management	10%	0%	0%	0%
123	Management and Sustainability of Forest Resources	20%	10%	5%	10%
124	Urban Forestry	0%	50%	0%	50%
125	Agroforestry	0%	5%	0%	5%
132	Weather and Climate	0%	10%	0%	10%
133	Pollution Prevention and Mitigation	0%	10%	0%	10%
134	Outdoor Recreation	0%	5%	0%	5%
135	Aquatic and Terrestrial Wildlife	5%	0%	5%	0%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	5%	0%
202	Plant Genetic Resources	0%	0%	5%	0%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%	0%	10%	0%
205	Plant Management Systems	15%	5%	15%	5%
216	Integrated Pest Management Systems	0%	0%	5%	0%
303	Genetic Improvement of Animals	0%	0%	10%	0%
307	Animal Management Systems	0%	0%	15%	0%
403	Waste Disposal, Recycling, and Reuse	0%	5%	5%	5%
601	Economics of Agricultural Production and Farm Management	0%	0%	5%	0%
605	Natural Resource and Environmental Economics	0%	0%	5%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	7.0	2.0	23.0	5.0
Actual Paid	6.8	1.5	34.5	0.6
Actual Volunteer	0.0	0.2	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**
340996	0	1094576	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
340996	73089	1094576	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1015573	0	13325395	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activities include 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 will be conducted:

- Communicate 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.
- Identify and promote the use of crop varieties and animal breeds with climate adaptive traits.
- Educate 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 quantify urban forest effects on UV exposure in relation to proper landscape design.
- Assist areas affected by past hurricanes and other natural disasters to rebuild their tree population.
- Collaborate, cooperate and partner with local, state and federal agencies, institutions, groups, private organizations/associations in seeking and delivering services to citizens.
- Conduct both commercial and private pesticide applicator certification programs.
- Promote and expand participation in the Louisiana Master Farmer Program.
- Maintain and coordinate the natural resource extension Coastal Plants program.
- Continue research activities conducted by the Center for Natural Resource Economics and Policy (CNREP).

2. Brief description of the target audience

Target audiences include Louisiana farmers and livestock producers, coastal managers, wetlands stakeholders, commercial and recreational fishermen, hunters, forest land owners/ managers, community

leaders/stakeholders, interested agencies and organizations and youth.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	117518	819820	13231	0

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

Patent Applications Submitted

Year:	2017
Actual:	3

Patents listed
Linscombe CL153W AG-2016-048-02
Linscombe CL272W AG-2016-049-02
Linscombe PVL01 AG-2014-41-01

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	24	75	99

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2017	613977

Output #2

Output Measure

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

Year	Actual
2017	340

Output #3

Output Measure

- Number of private pesticide applicators receiving initial certification

Year	Actual
2017	205

Output #4

Output Measure

- Number of commercial pesticide applicators receiving initial certification

Year	Actual
2017	500

Output #5

Output Measure

- Number of private pesticide applicators recertified

Year	Actual
2017	1597

Output #6

Output Measure

- Number of commercial pesticide applicators recertified

Year	Actual
2017	2753

Output #7

Output Measure

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

Year	Actual
2017	13

Output #8

Output Measure

- Number of educational program activities

Year	Actual
2017	1294

Output #9

Output Measure

- Number of logging industry individuals completing base certification educational phase

Year	Actual
2017	77

Output #10

Output Measure

- Number of tree care workers and arborists completing educational program for licensing
  Not reporting on this Output for this Annual Report

Output #11

Output Measure

- Number of Louisiana producers receiving Louisiana Master Farmer certification

Year	Actual
2017	14

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

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

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

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Louisiana's fisheries touch the people of Louisiana every day, providing food, recreation, and employment to all ages in all parts of the state. In 2016, the commercial marine fishery had a gross farm value of $409 million, and the commercial freshwater fishery had a gross farm value of $16.9 million. In 2016, the state of Louisiana issued 233,415 resident saltwater fishing recreational licenses and 11,549 commercial fishermen licenses. Additionally, over 2 million residents live in coastal parishes making a very large and diverse demographic impacted by Louisiana fisheries. Louisiana Sea Grant (LSG) and the LSU Agricultural Center (LSUAC) have ongoing educational programs for the various stakeholders impacted by Louisiana fisheries: commercial fishermen, recreational fishermen, seafood dealers and processors, and coastal residents. Some of the problems facing Louisiana fisheries and the impacted communities include natural disasters, man-made disasters, sea level rise, coastal erosion, variable populations of fishery species, changing regulations, suppressed dockside price due to imported seafood, and increasing operating and coastal cost of living expenses.

What has been done

Area agents, on campus specialists, and research faculty provide workshops, newsletters, fact sheets, personal visits, demonstrations, applied research, and meetings to share information on the biology, management, regulations, habitat, aquaculture, legal, socioeconomic issues, and resources with the various interest groups around the state. These have included focused commodity regional meetings like for oyster, crab, or shrimp, as well as a statewide Fisheries Summit encompassing all the commodities directly reaching several hundred stakeholders a year. Regular fact sheets covered a wide range of topics from management changes to best practices to maintain seafood quality. A monthly newsletter has been produced for over 30 years, and currently is emailed out to about 2,000 subscribers. An online blog version and specific Facebook page allow for rapid dissemination of important time sensitive topics like fishing closures or new regulations. Applied research has focused on topics like new bait for the commercial industry, economics of direct marketing, diseases in commercially important species, and value-added seafood products. In order to track impact and behavior change and the impact, a survey was designed and mail, texted, emailed, and put out on targeted social media sites to solicit responses from the various stakeholders that had participated in LSUAC and LASG programing. The questions were designed to specifically measure behaviors related to LSUAC and LASG programs over the last four years.

Results

Over 70 responses were returned representing commercial shrimp, crab, oyster, and finfish fishermen including freshwater, recreational anglers, charter-for-hire anglers, and commercial dealers and processors. In order to engage in the management process, outreach has focused on ways for the fishing stakeholders to participate in fisheries management, and over 94% of respondents engaged in some way, including attending state regulatory, commission or task force meetings, federal council meetings, and public comment in letters or phone calls. With increased cost of disasters, resiliency has been an important research and outreach area. Within the last four years, more stakeholders are evacuating earlier (30%), purchasing flood insurance (20%), and elevating structures or minimizing property at risk of storms (35%).

In order to protect sea turtles and reduce bycatch in the commercial shrimp industry, turtle excluding devices (TEDs) and bycatch reduction devices (BRDs) in trawl and skimmer nets are emphasized on outreach efforts. While required in federal waters, these are not required by inshore shrimp fishermen. However, 24% of inshore skimmer fishermen always or most the time use TEDs, and 48% of skimmer fishermen are using BRDs at least some of the time.

With threats to the crab population (over 88% report it?s been harder to catch blue crabs), reducing harvest of immature females of legal size and smaller crabs has been the focus of new management. However, even before the regulation changes, 86% of crab fishermen were releasing immature females, and many were using three escape rings in their traps (43%) and larger escape rings than required (43%).

The state implemented a new reporting system for charter-for hire and recreational anglers replacing the federal system, and 100% of anglers have been participating. To help save bycatch and discards in saltwater finfish fishing, increasing release survival can be done with descending and venting gear, and 100% of the charter-for-hire captain always use these gears.

In order to help fishermen receive a better price and have sustainable business, LASG and LSUAC have promoted direct marketing and value added practices, and over 60% of respondents have tried direct marketing while 39% have tried value added. However, 78% have tried to increase price through increased quality of product.

The results of this survey provide quantitative information that LSUAC and LASG programs are providing information necessary for behavioral change among the fisheries stakeholders in Louisiana for a more resilient and sustainable future.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Development of new knowledge and technologies

2. Associated Institution Types

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

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
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 stratospheric ozone recovery and global climate change, there is a critical need for systematic evaluation of UV impacts on trees and urban forest. Other harmful effects of UVR include: Sunburn (Erythema), tanning, premature aging of the skin, suppression of the immune system,

eye damage, and skin cancer. Urban forests are an integral part of urban green infrastructure, providing enormous ecological and social benefits to urbanites. Today more than 80% of US population lives in urban settings, yet we have limited understanding on how urban trees/forests cope with the harmful UV and protect our living environment.

This multi-institutional and multi-disciplinary research approach included among others, 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.

What has been done

In the preliminary study (Phase I), we collected leaf data on UV optical properties and UV absorbing compounds in more than 30 urban tree species. We continued our data collection under the live oak tree canopies using the automated mobile monitoring station at Southern University Ag Center (SU-Ag) facility to study tree canopy interception of UV and visible radiation in collaboration with USDA UVB Monitoring & Research Program (UVMRP) at Colorado State University. The SU-Ag station was configured and calibrated using UVMRP network protocol and data collection software program by the UVMRP collaborator. It was streamlined and coupled with the UVMRP Baton Rouge permanent station, located at the Louisiana State University (LSU) Ben Hur Farm, 10 miles from SU-Ag Campus. We are working on identifying the 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 mechanism of UV (A/B) induced DNA damage. We also provided various hands-on research & training opportunities to undergraduate, graduate, and postdoc in UV-B monitoring and research, and in forest ecology & tree genetics.

Results

* One postdoc researcher and six graduate students are participating in the project. They include three PhD students & three MS students.
* Two PhD students are working on quantitation of various wavelengths of direct, diffused and total UVB and UVA distribution below the tree canopy and modelling tree canopy reduction powers of UVA and UVB radiation as affected by leaf area index, tree canopy size, and solar angles.
* Two MS students are working on influence of tree canopy on PAR, Temperature, Humidity, Total UVB and UVA radiation.
* One MS student is studying the effect of UVB exposure on DNA damage & chlorophyll content in select tree species; and one PhD student is working on the DNA damage and repair mechanism.
* In FY 2017, the project provided various hands-on research & training opportunities to undergraduate, graduate, and postdoc in UV-B monitoring and research, and in forest ecology & tree genetics.
* Published two research peer-reviewed journal articles: one in Microscopy & Microanalysis and the other in Acta Horticultura.
* The project provides a web link to USDA-UVB Monitoring and Research Program at http://uvb.nrel.colostate.edu/UVB/index.jsf
* Our dissemination efforts continued through the following media:
* Research Gate: https://www.researchgate.net/profile/Yadong_Qi2
* Google Scholar: https://scholar.google.com/citations?user=8cwR4ZUAAAAJ&hl=en
* SU AgCenter Website: http://suagcenter.com/

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
124	Urban Forestry
132	Weather and Climate
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
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 mentioned in the overview, the state of Louisiana continued to grapple with the aftermath of the four major flood events of 2016 which caused very significant negative impacts in the life of citizens. In FY 2017, we continued to devote substantial amount of resources to assist in flood recovery efforts. Some resources such as personnel, were used to assist displaced citizens including youth. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project especially during the first half of the year. Some individuals and families are still struggling to complete the rebuilding of their homes.

The state budget problems continued to impact negatively on our ability to implement planned activities during the period and truly caused Southern University to be unable to meet federal mandatory 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 # 3

1. Name of the Planned Program

Family and Human Development

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
724	Healthy Lifestyle	0%	15%	0%	15%
801	Individual and Family Resource Management	0%	40%	0%	40%
802	Human Development and Family Well-Being	0%	40%	0%	40%
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	0%	5%	0%	5%
	Total	0%	100%	0%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	4.0	0.0	3.0
Actual Paid	0.0	5.3	0.0	2.7
Actual Volunteer	0.0	0.6	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	285994	0	172717
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	274088	0	166012
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The following activities/intervention will be conducted:

1. Extension and Research faculty will work 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.) will be organized to help disseminate information, increase awareness and implement programs.
3. Consumer curriculum will be designed to support objectives on financial planning and management.
4. Partnerships with banks and other financial agencies will be solicited and their expertise utilized.
5. Research results and other information will be communicated to customers through extension personnel in the form of publications, conferences, workshops, home/office visits, demonstrations and other educational resources.
6. Collaborate, cooperate and partner 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, Parenting Workshops, Parish and home visits, Demonstrations, Training sessions for adults and children, etc.
8. Implement consumer curriculum
9. Conduct workshops/training to promote positive home environments and encourage community involvement
10. Promote physical fitness & healthy eating
11. Conduct health fairs (in collaboration with Nutrition and Health Program staff, communities, health organizations, schools, etc)
12. Compile and disseminate resource directory (pamphlet)
13. Create additional educational links on the SU Ag Center Homepage
14. Conduct educational trainings on emergency preparedness
15. Conduct 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 are 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 lack 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 are placed at risk and those that are potentially at risk will benefit from the services provided by the planned program.

3. How was eXtension used?

{No Data Entered}

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	8163	3121	2034	1401

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

Patent Applications Submitted

Year: 2017

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	0	2	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2017	8

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
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

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). "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. 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 once 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 lead 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

What has been done

Second Chance 2 Recover (a prison pre-release/re-entry program) 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 (a living interactive family education) classes were conducted at St. Landry Parish and East Baton Rouge Parish prisons. 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 the family and child. Our faculty and staff utilized 1890 Extension Funds along with external grants to conduct prison pre-release/re-entry Second Chance 2 Recover and living interactive family education 4-H LIFE programs to inmates. 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.
In FY 2017, there were 30 classes conducted at the different sites for 541 inmates (72 male and 469 female). There were additional 250 family members participating in various activities.

Results

* Five hundred and forty-one (541) 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.
* Ninety-one (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.
* Ninety-two (92) percent of the participants who attended the sessions developed their own resumes.
* One hundred (100) percent of those who developed resumes indicated that it will benefit them with finding gainful employment once they are released from prison.
* One hundred (100) percent of those who developed resumes also indicated that they will do everything possible to keep from returning to prison.
* One hundred and twenty-six (126) youth attended the family event/visit and were reunited with their parents who were incarcerated.
* One hundred (100) percent of participants said they will recommend our workshop, sessions and family visit to others.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Clients change behavior, attitude or lifestyle

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Economists and others in the financial service industry are deeply concerned about Americans low levels of financial literacy and the high societal costs of their financial illiteracy. Personal financial management courses are not universally taught in high schools or in colleges. Therefore, many Americans lack the financial acumen to navigate the increasingly complex world of finance. Research suggests that financial illiteracy has caused many Americans to become mired in debt, to pay exceeding high interest fees, to face emergency expenses without adequate savings cushion, or to file for bankruptcy, among others. Because of low levels of financial literacy, many youth/college students do not understand how to budget, save, invest, or the importance of credit. U.S. student loan debt now exceeds $1.48 trillion; delinquency rate is 11.2%, and the average loan for the Class of 2016 graduate is $37,172. The lack of financial knowledge and ability among America?s youth is a serious problem that is not going to improve on its own.

What has been done
We conducted research to assess levels of financial literacy among a selected group of youth and undergraduate students, to track the effectiveness of instruction on basic financial concepts, and to examine the role of socioeconomic and demographic characteristics on knowledge, attitudes, and behavior. The study was conducted using two groups in 2016 and 2017. Using questions from the National Financial Capability Survey (http://www.usfinancialcapability.org/), we developed a booklet Lessons on Money which covered topics such as interest rate computation, inflation, mortgage payments, and stock market risk. The booklet and other resources were used to instruct participants on financial literacy. Assignments requiring participants to complete monthly budgets and compute simple and compound interest and car payments under various hypothetical scenarios were also conducted. To test knowledge gained, two financial quizzes were implemented. Pre-and-posttests were conducted based on topics covered. Participants included youth and undergraduate students. The same booklet was provided to 230 adults who

participated in workshops and seminars conducted.

Results

RESULTS FOR FALL 2016

For questions from the National Financial Capability Survey which measured knowledge of interest computation, inflation, mortgage payments, and stock market risk, participants performed better on the posttest than on the pretest. However, the scores were not statistically significant. Eighty-one percent of participants thought the information covered in the Lessons on Money booklet was useful (31%) or very useful (50%) and 19% percent rated the information as extremely useful.

* Based on an exit survey, 88% of the participants agreed or strongly agreed that the budgeting assignment changed their views about their money and 81% agreed or strongly agreed that they now had a better understanding of how interest and car payments were determined.

RESULTS FOR 2017

Performance on the posttest quiz was better than on the pretest. With the exception of the question on the relationship between interest rates and bond prices, statistically significant differences existed in the pre and post-test scores earned on questions from the National Financial Capability Survey. The results also indicated that participants' knowledge increased after they were taught, received, and studied copies of the Lessons on Money booklet.

* One undergraduate student mentored by the project director used a subset of the project's data to write and present a paper at a professional meeting and received the First Place Award for her paper. She also wrote her Honors Thesis from the study's data.

Youth & adults gained substantial knowledge on managing finance which will lead to reduced debt burden (especially student loan defaults) and increased savings along with reduced number of those filing for bankruptcy. Society with gain positive economic freedom.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

As mentioned in the overview, the state of Louisiana continued to grapple with the aftermath of the four major flood events of 2016 which caused very significant negative impacts in the life of citizens. In FY 2017, we continued to devote substantial amount of resources to assist in flood recovery efforts. Some resources such as personnel, were used to assist displaced citizens including youth. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project especially during the first half of the year. With some assistant, some individuals and families are still struggling to complete the rebuilding of their homes.

The state budget problems continued to impact negatively on our ability to implement planned activities during the period and truly caused Southern University to be unable to meet federal mandatory 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

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%	19%	10%
702	Requirements and Function of Nutrients and Other Food Components	0%	10%	0%	10%
703	Nutrition Education and Behavior	0%	35%	0%	25%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	80%	5%	28%	10%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	20%	10%	44%	15%
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: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	4.0	3.0	6.0
Actual Paid	2.0	3.0	6.8	6.5
Actual Volunteer	0.0	0.5	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**
100161	200177	215743	350853
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
100161	264000	215743	430462
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
298306	0	2474557	0

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 will be used to teach producers, consumers, handlers and processors about strategies for keeping food safe. Specific certification trainings will include 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 planned during this planning cycle:

- Develop science-based food safety educational outreach programs in the form of GAPs/GHPs to provide Louisiana growers with the tools and resources they will need to make knowledgeable and profitable management decisions pertaining to the production of safe, healthy and nutritious fruits, vegetables and nuts.
- Collaborate and conduct research on food safety and prevalent foodborne diseases;
- Promote use of food safety, safe school food nutrition curriculums; and health tips to ensure food safety during school activities;
- Create awareness and generate 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;
- Collaborate, cooperate and partner with local, state and federal agencies, institutions, groups, private organizations/associations in seeking and delivering food safety information to residents;
- Conduct certification 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.
- Research and disseminate 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 will be the target audience of this planned program. There is a large number of low income and limited resource families in Louisiana. These families typically lack the knowledge, information, and skills to utilize existing resources to improve their diet and ensure food safety. Children, the elderly and individuals with various health limitations are particularly vulnerable to food borne

illnesses. Particular attention will be 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?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	27896	209763	4449	0

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

Patent Applications Submitted

Year: 2017

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	2	25	27

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of individuals certified through food safety programs

Year	Actual
2017	403

Output #2

Output Measure

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

Year	Actual
2017	37

Output #3

Output Measure

- Number of Web page views

Year	Actual
2017	275103

Output #4

Output Measure

- Number of educational program activities

Year	Actual
2017	1119

Output #5

Output Measure

- Number of USDA published materials distributed

Year	Actual
2017	700

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
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Food-related diseases affect tens of millions of people and kill thousands. Increasingly, fresh fruit and vegetable products have been implicated as the source for foodborne pathogens causing foodborne illnesses. 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

The goal was to assist citizens especially farmers and food handlers, elderly, low income, educationally disadvantaged and poor families enhance their skills in proper food selection, storage and preparation. Research and extension personnel in the Nutrition and Health Planned Program collaborated and worked with citizens of Louisiana to increase their understanding of the impacts of foodborne illnesses. We conducted ServSafe training and certification for 132 individuals, Better Processing for School with certification for 205 handlers, Seafood HACCP training for 68 persons, GAP training for 330 persons, and held food safety seminars for 510

persons. We published --- fact sheets and bulletins and disseminated to citizens. Radio, newspaper publication and television were used to publicize our activities. Our research and extension faculty/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. This project is in its 2nd year, so far, we have conducted five training sessions for 70 farmers and producers.

Results

* We certified 132 individuals on the ServSafe program.
* Better Processing for School trained 205 food handlers.
* We trained 68 persons who acquired skills on the Seafood HACCP.
* GAP training was conducted for 330 farmers and producers and 510 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 90%. 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.
* On-farm food safety practices by small, medium and large producers increased by 50%.

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.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to U.S. Food and Drug Administration (FDA), from 1996 to 2010, approximately 131 produce-related reported outbreaks occurred, resulting in 14,350 illnesses, 1,382 hospitalizations and 34 deaths. These outbreaks were associated with approximately 20 different fresh produce commodities. This is a significant public health burden that is largely preventable.

The Food Safety Modernization Act (FSMA) has shifted the focus more on preventing food safety problems rather than relying primarily on reacting to problems after they occur. FSMA will impact small- and medium-sized growers and packers those who grow and pack on their farms, and those who sell product at road side stands and farmers markets in Louisiana. Louisiana consist of 28,093 farms of varied sizes. Food safety educational outreach and technical assistance are important in managing food safety risk including the practices, and procedures employed during the production, handling and holding of fresh and processed produce.

What has been done
LSU AgCenter has established a network of food safety educational professionals and developed a team that consists of extension specialists, agents, and individuals from state agricultural departments, food hums, cooperatives and other non-governmental organizations. The team has developed and delivered FSMA related educational outreach and technical assistance programs Louisiana food systems. Educational materials, tools and other resources currently available were identified and the inventory was compiled on the LSU AgCenter Food Safety webpage that are linked to the regional center and collaborating organization webpages. The team has delivered FSMA related FDA recognized training such as FSPCA and PSA Growers Training, Good Agricultural Practices (GAPs) and other short trainings developed by this project to more than 500 producers and processors. Several of the existing and modified training materials were translated into languages specific to target audience in Louisiana.

Results

The LSU AgCenter food safety program has resulted in an increase in 62% (n= 21) of GAPs Certified farms in Louisiana between 2014 and 2017. This project assisted a variety of specialty crop farms including micro green producers, greenhouse produces, row crop, blueberry, citrus and sweet potato producers to obtain GAPs/GHPs certification. In addition, we had more than 12,700 views of our food safety web page which indicates the quality and popularity of the publications resulting from this project on issues related to on-farm food safety. Our novel web base decision-making applications have provided technology savvy fruit and vegetable growers and LSU AgCenter ANR agents with instant access to information and management tactics to assist producers with on-farm food safety practices. This project helped to increase implementation of food safety practices and documentations on GAPs/GHPs among specialty crop growers. Almost all the workshops attendees (95%) indicated that their knowledge on implementing food safety practices increased to high or very high level. A survey conducted among the workshop participants after 6 to 9 months indicated 90% have improved their on-farm food safety practices, 80% implemented good agricultural practices, 68% started keeping on-farm records, 46% performed workers health and hygiene trainings and 90% shared their increased in knowledge to other growers and producers. The growers also indicated an increase in sales after adopting on-farm food safety practices; 50% indicated increased market opportunity, 8% increased their sales by 20% and 30% of the growers indicated their sales was increased by 10% as a result of implementing GAPs/GHPs. In addition, the increase awareness of food safety principles and best management practices are helping them to meet the requirements that are proposed in the Food Safety Modernization Act.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

As mentioned in the overview, the state of Louisiana continued to grapple with the aftermath of the four major flood events of 2016 which caused very significant negative

impacts in the life of citizens. In FY 2017, we continued to devote substantial amount of resources to assist in flood recovery efforts. Some resources such as personnel, were used to assist displaced citizens including youth. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project especially during the first half of the year. With some assistant, some individuals and families are still struggling to complete the rebuilding of their homes.

The state budget problems continued to impact negatively on our ability to implement planned activities during the period and truly caused Southern University to be unable to meet federal mandatory 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

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	10%	5%	10%	5%
123	Management and Sustainability of Forest Resources	0%	0%	10%	0%
205	Plant Management Systems	30%	20%	5%	20%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%	5%	0%
212	Pathogens and Nematodes Affecting Plants	0%	0%	5%	0%
213	Weeds Affecting Plants	5%	0%	5%	0%
216	Integrated Pest Management Systems	5%	0%	10%	0%
301	Reproductive Performance of Animals	0%	10%	0%	10%
302	Nutrient Utilization in Animals	0%	20%	5%	20%
305	Animal Physiological Processes	0%	0%	5%	0%
307	Animal Management Systems	20%	30%	0%	30%
308	Improved Animal Products (Before Harvest)	0%	5%	5%	5%
311	Animal Diseases	5%	0%	5%	0%
313	Internal Parasites in Animals	0%	5%	0%	5%
402	Engineering Systems and Equipment	0%	0%	5%	0%
601	Economics of Agricultural Production and Farm Management	0%	5%	5%	5%
605	Natural Resource and Environmental Economics	0%	0%	10%	0%
610	Domestic Policy Analysis	0%	0%	5%	0%
704	Nutrition and Hunger in the Population	20%	0%	0%	0%
902	Administration of Projects and Programs	0%	0%	5%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	22.0	7.0	62.0	14.0
Actual Paid	18.4	6.0	48.6	17.0
Actual Volunteer	0.0	0.5	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**
919774	269395	1541924	968746
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
919774	213990	1541924	939706
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
2739318	0	17719943	7329

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activities include research and extension programs directed towards row crop, fruit and vegetable production; and animal and aquaculture production. LSU AgCenter programs will address 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 will continue to address immediate and long term needs of small and limited resource farmers. Specific activities include:

1. Design and conduct 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. Conduct workshops, farm visits, livestock shows, demonstrations, field tours, grower meetings, training sessions;
3. Maintain modernized facilities and acquire additional land for research and extension programs;
4. Work with internal and external communication channels as well as traditional and social media to disseminate important commodity production information to clients and stakeholders.
5. Educate 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. Collaborate, cooperate and partner with local, state and federal agencies, institutions, groups, private organizations/associations.
7. Enhance marketing opportunities in traditional and alternative outlets such as farmer's markets, community supported agriculture (CSA), and other outlets.

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

2. Brief description of the target audience

The target audience for this program includes approximately 6,000 growers with 7.9 million acres of land in production and related agribusinesses:
•Cotton--284 producers with 139,902 acres in production who produced 139 million pounds of cotton.
•Feed grains--1,530 producers with 596,414 acres in production who produced 90 million bushels of feed grains.
•Rice--990 producers with 420,821 acres in production who produced 3.2 billion pounds of rice.
•Soybeans--2,362 producers with 1.2 million acres in production who produced 56 million bushels of soybeans.
•Sugarcane--447 producers with 414,089 acres in production who produced 1.5 million tons (3.2 billion pounds) of raw sugar and 73 million gallons of molasses.
•Sweet potatoes--46 producers with 9,303 acres in production who produced 3.1 million bushels of sweet potatoes.
•Wheat--82 producers with 15,783 acres in production who produced 822,012 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 are 6,600 producers with 33,000 acres of land in commercial production and an estimated 632,366 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?

Information from eXtension is used in presentations, newsletters, answering phone calls, answering emails, publications, and extending information to the public

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	150907	1675000	0	67397

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

Patent Applications Submitted

Year:	2017
Actual:	18

Patents listed
Liu AG-2014-09-03
Swale AG-2017-005-01
Swale AG-2017-005-01
Swale AG-2017-005-02
Sabliov AG-2014-26-05
Sabliov AG-2014-26-07 (MX)
Sabliov AG-2014-26-13 (EA)
Sabliov AG-2014-26-14 (BR)
Sabliov AG-2014-26-15 (AU)
Sabliov AG-2014-26-10 (ID)
Sabliov AG-2014-26-09 (JP)
Sabliov AG-2014-26-08 (KR)
Sabliov AG-2014-26-04 (EP)
Sabliov AG-2014-26-06 (ZA)
Sabliov AG-2014-26-16 (AP)
Sabliov AG-2014-26-11 (IN)
Sabliov AG-2014-26-18 (RO)
Sabliov AG-2014-26-23 (HK)

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	42	306	348

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2017	3686921

Output #2

Output Measure

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

Year	Actual
2017	44

Output #3

Output Measure

- Number of field demonstrations

Year	Actual
2017	327

Output #4

Output Measure

- Number of grower field days

Year	Actual
2017	83

Output #5

Output Measure

- Number of educational program activities

Year	Actual
2017	1895

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.
6	Adoption of plant varieties by producers to improve yield and economic benefit.

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

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

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

To address the rise in unethical behavior seen throughout livestock programs, a variety of livestock ethics trainings have been created. Evaluation of the efficacy of those trainings has demonstrated that participants indicate an increase in knowledge of ethical behavior. Youth participants were also more likely to make an ethical choice when faced with tough decisions. Currently livestock exhibitors in Louisiana 4-H are required to complete the Quality Assurance and Ethics Certification program, however, participants of the horse program are not held to the same standard. With high participation in the Louisiana State 4-H and FFA Show, the following study focused on assessing youth knowledge, attitude and confidence in understanding of equine welfare at the 4-H state horse show, as well as determine the beliefs and observations of unethical practices and if differences exist between those parameters in youth competitors.

What has been done

In 2016 a survey was distributed to participants (aged 9-19) of the Louisiana State 4-H & FFA Horse Show to determine their awareness of equine ethics and motivation for participation in horse shows. The objectives of this evaluation were to: 1. To describe 4-H state horse show competitors? participation in horse shows. 2. To describe 4-H state horse show competitors? knowledge, attitude and confidence in equine well-being as measured by interest in horse care management, ability to locate resources to teach others about equine well-being and knowledge of horse welfare factors. 3. To describe 4-H state horse show competitors? beliefs about and observation of unethical equine practices. 4. To determine if differences exist between 4-H state horse show competitors? beliefs about and observation of unethical equine practices.

Results

Respondents believe all factors listed were important however the mental and emotional state of the horse was not as high of a priority as the other factors. Management factors are more associated with equine welfare than mental or emotional factors; however, the scientific community believes that equine welfare should encompass management, mental, and emotional factors. This study finds youth belief in equine welfare is similar to that in adults and suggests a lack of education or information acceptance. Youth believe that unethical practices are rarely used and they rarely witness such practices at the Louisiana 4-H State Horse Show. However, youth do believe that excessive repetition of a cue was used, and they report observing excessive jerking of the reins. In contrast, adults have reported an extreme concern with the welfare of horses at stock-type shows and recognize practices at shows that may be harmful to a horse's welfare, with excessive rein jerking most commonly observed. This would suggest a disconnect in youth understanding of ethical behavior. Additionally, youth may not perceive excessive rein jerking or repetition of a cue as harmful to the horse's welfare. Youth agree they are more responsible as a result of participating in the 4-H horse project, and they follow the rules in the state 4-H Horse Show Catalog. Additional effort should be made in utilizing the available 4-H resources to emphasize the importance of equine welfare as well as the different factors that should be included. Educational opportunities within the 4-H Horse project allow members a safe environment to shape their beliefs about moral practices. This in turn can affect their own actions as well as their beliefs regarding observed actions by others, which may effect change in what is perceived as socially acceptable in equine welfare and horse shows.

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
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 #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
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Addressing global food security and hunger is closely linked to sustainable animal and plant productivity and profitability which are of paramount importance to the agricultural sector of Louisiana. Small-scale producers faced the greatest challenges on 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. Addressing these close knit and perennial problems could benefit the farmers, consumers, and governments worldwide. Infectious diseases are a major concern amongst small, limited resource farmers. Diseases affecting livestock can have a significant impact on animal productivity and production. Because of this, they have been looking for more efficient ways to safeguard herd health. Many limited resource producers do not have site specific Best Management Practices (BMPs) including herd health plans. There is also very little information related to the prevalence of production limiting diseases on small farms in Louisiana.

What has been done
In FY 2017, five sustainable agriculture field days were conducted with over 285 producers in attendance. In collaboration with the Louisiana State University Veterinary School two goat field days were also conducted (one at SU Ag Center Experiment Station and the other at LSU Vet School) with 145 producers and potential producers in attendance. The field days provided lectures, producer testimonies, and hands-on experience to participants. Research-based educational information was packaged and disseminated to participants and also through extension agents to the clients. Research and extension personnel advised participants and provided "on the spot" solutions to problems that they had. Scientists at the LSU Vet School, collaborated with SU Ag Center counterparts in a research grant Profitability for Small Beef Producers through Sustainable Forage Systems and Value Added Forage.

Through the utilization of survey-based research, we assessed production practices employed by cattle producers and their perceptions of the use of new management practices. Surveys were administered to small cow/calf producers in Louisiana in the form of mail-in questionnaires, on site visits, and questionnaires handed out to producers participating in various activities, annual shows, and producer/association meetings. Five (5) presentations on Herd Health Programs and

Management Practices were given to increase the awareness of the importance of BMPs. Cattle and goat BMPs and fact sheets were developed and provided to extension agents and other field personnel which helped more producers (and potential producers) gain knowledge and skills about BMPs.

Results

The results of the herd health management practices conducted showed that:
-49% of respondents indicated that they do not have a Herd Health Plan for the animals on their farm
-An average of 87 % of the producers indicated an interest to integrate BMPs in their own operation if more information and resources were available
-100 percent of participants at workshops said they gained new knowledge and skills about reducing on-farm diseases of their livestock
-Additionally, one high school student, five undergraduate students and one graduate student gained knowledge and skills on techniques of conducting research as they worked with various aspects of this project.
-Two journal articles were published from this research.
-Ninety-three percent of participants in the sustainable agriculture field days stated that they gained new knowledge and skills;
-Ninety-five percent of them said they will certainly utilize knowledge and skills gained.
-Participants at the goat field days gained knowledge/skills about the benefits of the FAMACHA chart. Some previous participants testified that they used the chart and it saved money in goat health care costs.
-Ninety-eight percent of the participants said that the testimonies given by some participants at the field days inspired them to try new ideas.

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
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
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The small farmers and ranchers of Louisiana face the greatest challenge of generating sufficient income to provide adequately for a family. Considerable variation exists in the profitability and management expertise of farm and agribusiness firms, particularly among small farms and small agribusiness firms. Small agricultural producers struggle with becoming self-sustainable and profitable. This audience also includes urban farmers, back yard gardeners and community agriculturalist. Critical agricultural issues characterizing small agricultural producers are: 1) limited operating capital; and 2) lack of adequate technical expertise, including management 3) access to competitive markets. Economic crisis in Louisiana over the past decade, especially the high cost of farm inputs during FY 2017 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 in the verge of being bankrupt.

What has been done

Extension Program at the Southern University Land-Grant Campus is the primary educational outreach unit that disseminates research-based educational information to agricultural producers and potential producers. Agricultural and Natural Resources (ANR) Program Area focuses primarily on preparing small, traditionally unserved and underserved farmers, ranchers to compete in a dynamic, ever-changing environment. The overall goal of this program area was to deliver high quality educational programs to the agricultural producers of Louisiana and the region which will allow them to maintain sustainable, profitable businesses, farms, communities and livelihoods.

Throughout FFY 2017, the ANR Program area provided training and technical assistance via various workshops, field days, farm tours, trainings, meetings and conferences with over 11,500 participating. We also provided indirect contacts to about 330,409 citizens. Some of these activities include:

1. Recovering Your Soil: Gardens, Farms & Spirit Fall Workshop
2. Louisiana Ranchers and Growers Association Workshop
3. Community Cattle Enterprise Meeting
4. Community Cattle Enterprise Cluster # 2 Field Day
5. Small Farmer Agricultural Leadership Institute
6. Louisiana Small Farmer Agricultural Leadership Institute
7. Sustainable Urban Agriculture Certification Course
8. 7th Louisiana Small Farmer Conference
9. Backyard and Small Farm Poultry Workshop
10. Pasture Walk and Small Farm Summer Tour
11. The Cut Flowers Workshop
12. Farmers Field Days
13. Disaster Education Workshop
14. Farm Emergency Plan: Developing An Action Plan for Your Small Family Farm
15. Sustainable Urban Agriculture Certification Training

Results

During FY 2017, the survey of participants showed the following results:
* 100 percent of the respondents said that they gained knowledge and skills through participating in our activities.
* 97 percent of the respondents said that with information from the workshops and conferences, they found new business opportunities and networks for collaboration.
* 91 percent of the respondents said that with the help of the workshops and field days, they actually tried new ideas and techniques which yielded good results.
* Participants reported mentoring other farmers and potential farmers.
* Participants gained knowledge and skills that they used in organizing and improving their community.
* Some previous participants are serving on a local, state or national committees

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

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

Not Reporting on this Outcome Measure

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
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Behavior change or adoption of behaviors to meet recommendations in the Dietary Guidelines for Americans and to reduce chronic disease risk may be challenging in rural areas due to the local nutrition environment.

What has been done
Parishes have prioritized strategies to increase healthy food access and physical activity opportunities in their communities. Environmental strategies that have been used include improvements in layout or display of food, changes in menus (variety quality offering lighter fares), point-of-purchase/distribution prompts, menu labeling/calorie counts, establishment of edible gardens, creation of playgrounds, and use of playground stencils to increase physical activity in existing playgrounds. Additionally, case study research was conducted to describe and assess the nutrition environment of a rural Louisiana parish (county), which has extreme rurality (100%), a high rate of poverty (36%), obesity, obesity-related chronic diseases, and poor health outcomes

so that applied researchers and Extension educators could better understand the obstacles to behavior change.

Results

Seven schools have adopted the Smarter Lunchrooms movement to enhance the school nutrition environment. Five stores have partnered with Healthy Communities to enhance healthy decision making at grocery stores. Two Healthy Communities Partnered Stores have implemented healthy checkout aisles and two have installed marketing materials. Coalitions have prioritized food production within their own communities with the development of one fruit orchard, three community gardens and one seasonal farmer?s market. Statewide, 43 school/community gardens continue to provide access to healthy foods. Results of the case study research project indicate lack of availability of healthy food options at most food retail outlets (range 1.8 to 36.1 of 54 possible points). The smallest, poorest (51% poverty rate) town included in the case study had no healthy food options at stores. The consumer and community nutrition environments an present challenges to people who are attempting to meet the Dietary Guidelines recommendations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

Outcome #6

1. Outcome Measures

Adoption of plant varieties by producers to improve yield and economic benefit.

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
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In 2017, corn, grain sorghum, and wheat were produced on 489,000, 12889, and 15640 acres, respectively. Yields for corn, grain sorghum, and wheat were 185.1, 88.9, and 43.1 bu/A,

respectively. Corn and grain sorghum are produced in the major crop growing regions in the state with the exception of southwest Louisiana. Wheat is produced across the state. During 2016, these crops generated $337,738,175 in gross farm value. This accounts for 9.8% of the total income generated by plant enterprises in the state. While acreage is down from 2016, these crops are still important to the health of Louisiana agriculture. In addition to providing income to producers, additional income is generated to consultants, agricultural product/equipment dealers, and personnel at buying points.

What has been done

Based on research and extension efforts of LSU AgCenter scientists and specialist, following recommended production practices can save producers money and optimize profits. However the impact of LSU AgCenter Extension efforts has not been assessed in recent years to determine if recommended practices are being communicated effectively and adopted by producers and consultants that influence producers.

The LSU AgCenter provides educational programs to stakeholders based non-biased research conducted by AgCenter scientists. These efforts are disseminated through a variety of venues including, but not limited to: county agents production meetings, crop specific trainings by specialists, popular press, Louisiana Agriculture Magazine, radio, TV, parish and experiment station field days, on-farm demonstrations, LSU AgCenter commodity web pages, and newsletters. Farm specific issues are addressed through site visits, emails, and phone calls.

Results

A survey was conducted in spring of 2018 to determine the level of impact LSU AgCenter efforts are making on the adoption of recommended production practices by stakeholders. County agents were asked to provide clientele with a link to an online survey. There were a total of 29 respondents: 79.3% producers and 20.7% consultants. The majority (69-93%) of producers and consultants follow LSU AgCenter recommended practices. Adoption of practices dealing with irrigation and sampling for nematodes were low. This is probably due to the fact that all fields are not infested with nematode and do not need sampling. Not all fields are irrigated; therefore this questions is not applicable. The practice largest percentage of farmers and consultants reporting adoption was for planting during the recommended time period (93%).

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

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 mentioned in the overview, the state of Louisiana continued to grapple with the aftermath of the four major flood events of 2016 which caused very significant negative impacts in the life of citizens. In FY 2017, we continued to devote substantial amount of resources to assist in flood recovery efforts. Some resources such as personnel, were used to assist displaced citizens including youth. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project especially during the first half of the year. With some assistant, some individuals and families are still struggling to complete the rebuilding of their homes.

The state budget problems continued to impact negatively on our ability to implement planned activities during the period and truly caused Southern University to be unable to meet federal mandatory match requirements.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Louisiana supports on of the most diverse commercial aquaculture sectors in the nation, with a current value of over $546 million annually. Important industries include farmed crawfish, captive-raised alligators, cultured oysters, pet turtle hatchlings, and a variety of minor species. The Louisiana aquaculture industry includes over 2400 operations throughout the state in addition to numerous support industry facilities (feed mills, processing plants, wholesale buyers, etc.). Additionally, there are an estimated 127,000 private (non-commercial) ponds within the state, occupying over 50,000 acres, with an estimated value of $65 million annually in fish production, recreation and enhancement of property values. Taken together, these numbers represent countless commercial and residential stakeholders with a need for access to aquaculture training, advice and educational materials.

The LSU AgCenter has developed a variety of aquaculture educational programming to meet diverse clientele needs while adapting to reduced FTEs over time. In conjunction with the State Specialist, County- and Fishery Agents visit farms to counsel producers on specific problems. They also organize group meetings, field days, and demonstrations to disseminate information on the latest production technology. Written materials (both hard copy and web-based) and radio and television news are also employed to reach producers and other users of aquaculture information. It has been demonstrated in prior stakeholder

surveys that the AgCenter has played a major role in influencing the decisions of producers regarding various management practices involving aquaculture production and pond management. However, this influence is monitored periodically to the extent possible in a quantitative manner by the AgCenter to provide better educational programs to its stakeholders.

Representatives from the two largest clientele groups for aquaculture programming (farmed crawfish producers and recreational pond owners/managers) were surveyed during the spring of 2018. The surveys were sent via email to recipients of the AgCenter's Rice Production Newsletter, and to a list of clientele interested in pond management information). Surveys were developed to capture selected demographic, financial and recommendation adoption information about each clientele group.

Crawfish Producer Survey: A total of 15 crawfish production surveys were completed at the SurveyMonkey website. Most of the respondents were growers, while the remainder were industry stakeholders such as processors, bait suppliers, AgCenter educators and other interested parties. A wide range of farm sizes (less than 50 acres to more than 500 acres) were represented. Similarly, typical yields were quite variable among survey respondents, ranging from less than 300 lbs/acre to over 800 lbs/acre. The number of years respondents had been involved in crawfish production ranged from less than 1 year (7%) to more than 15 years (43%).Adoption of recommended production practices was also evaluated, with some practices directly impacting yield and others influencing profitability.

All responding crawfish producers had adopted at least some of the research-based practices that have been emphasized in extension education programs. Overall, recommended practices had an average adoption rate of 60.2 percent. When practices related to oxygen measurement (an activity which most producers have long avoided) are excluded, adoption rates increased to an average of 64 percent. Adoption of specific recommended practices varied among all respondents and generally reflected management focused on rice rotation rather than maximizing crawfish yields.

An economic assessment of recommended production practices was previously developed based on published enterprise budgets for crawfish production (LSU Department of Agricultural Economics & Agribusiness: A.E.A. Information Series No. 293 - February 2013) and field observations in commercial operations. Differences in net returns based on ignoring or adopting certain practices individually were extrapolated on a per-acre basis in relation to total costs and projected yields. Many of these potential impacts are not necessarily additive within an operation, although some clearly could be. The average potential impact per acre was $175.

Pond Owner/Manager Survey: There are an estimated 127,000 inland ponds in Louisiana. For perspective, Texas has over 400,000. Adoption of recommended management practices has previously been evaluated based on direct communication with Ag Center clientele, but low response rates precluded an in depth analysis for this report.

All responding pond owners/managers in past surveys had adopted at least some of the research-based practices that have been emphasized in extension educational programs throughout the state. Overall, recommended practices had an average adoption rate of 46.1 percent. While adoption of specific recommended practices varied among all respondents, there was a notable aversion in general to practices involving significant time and/or physical effort (specifically liming and fertilizing ponds). Adoption rates for all

other recommended practices in the survey averaged closer to 54 percent.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Horticulture

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
202	Plant Genetic Resources	0%	0%	15%	0%
204	Plant Product Quality and Utility (Preharvest)	0%	0%	7%	0%
205	Plant Management Systems	85%	0%	37%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%	7%	0%
212	Diseases and Nematodes Affecting Plants	5%	0%	7%	0%
213	Weeds Affecting Plants	5%	0%	10%	0%
405	Drainage and Irrigation Systems and Facilities	0%	0%	7%	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: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	10.0	0.0	14.0	0.0
Actual Paid	7.7	0.0	13.8	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
385988	0	437830	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
385988	0	437830	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1149568	0	5021895	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Key horticulture program areas address issues related to home grounds; home, community and school gardens and ornamentals and turf. The Louisiana Master Gardener program provides volunteers to assist in addressing the growing needs of horticulture audiences and increased emphasis is placed on school and community gardening efforts. The Advanced Louisiana Master Gardener Program is in its infancy; however, it is beginning to graduate a few Advanced Master Gardeners. The Louisiana Super Plants program continues to be offered to local horticulture professionals.

Teaching methods include 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 include horticulture professionals, home gardeners, nursery industries, athletic field managers, Louisiana Master Gardener Volunteers and related agribusiness clientele.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	751758	16140683	18413	0

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

Patent Applications Submitted

Year:	2017
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	17	34	51

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2017	1965352

Output #2

Output Measure

- Number of Louisiana Master Gardeners completing training series

Year	Actual
2017	219

Output #3

Output Measure

- Number of service hours contributed by all Louisiana Master Gardeners

Year	Actual
2017	80380

Output #4

Output Measure

- Number of educational contacts made by Master Gardener volunteers

Year	Actual
2017	1943060

Output #5

Output Measure

- Number of educational program activities

Year	Actual
2017	1123

Output #6

Output Measure

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

Year	Actual
2017	10

Output #7

Output Measure

- Number of school gardens established

Year	Actual
2017	23

Output #8

Output Measure

- Number of advanced Master Gardeners certified

Year	Actual
2017	0

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

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Producing a home garden is a hobby shared by all ages and races of people in Louisiana. As diverse as the producers are so are the crops. Louisiana gardeners can easily produce 33 varying vegetable crops with hundreds and in some cases thousands of varieties under each vegetable type. In 2016, an estimated 632,366 home gardeners grew edible plants as a hobby or to supplement household food supply. This hobby accounted for an estimated Gross Farm Value GFV of $313 million dollars (LSU AgCenter, 2016). The LSU AgCenter recognizes the demand for science based information to improve yields and nutritional value of food products, namely

vegetables produced in single family and multi-family residential quarters. While nutrition and yield are important factors, gardeners are also demanding information on managing pests including diseases, viruses, weeds, and insects. Home gardeners are often limited by space and need information on growing in containers or vertical gardening. Some gardeners produce vegetables in the soil and require fertilizer recommendations. Many gardeners seek counsel of the LSU AgCenter for varietal information to select the best suited vegetable crops and cultivars for our climate.

What has been done

Providing science based information to such a large audience (often times not members of garden clubs or associations) requires LSU AgCenter agents to extend information using many methods. Online and printed publications are provided to individuals seeking information as well as to masses at garden centers, garden shows, and garden seminars. The LSU AgCenter provides two series of fact sheets targeting the home garden audience. The first is a crop by crop production series which provides information on vegetable production on individual crops named Vegetable Gardening Tips. The second fact sheet series is called the Home Garden Series and includes information not specific to one crop but on cultural practices, including growing transplants, building raised beds, harvest information divided into spring and fall crops, managing weeds in the home garden, and soon to be published, organically managing insects in the home garden. A quarterly published newsletter is also available online and printed in garden centers and in some parishes direct to home gardeners titled Horticulture Hints. This newsletter has a vegetable section focusing on seasonal vegetable production. In addition to printed materials, county agents as well as state specialists provide lectures on vegetable production throughout the state at various locations. On an individual basis county agents respond to specific questions asked by home gardeners, and when the answer is unknown, county agents will reach out to the state specialist to conduct on site visits to determine a cause and a solution for problems encountered in a hobby garden. When hobby gardeners want more in depth education, we recommend they participate in the LSU AgCenter Master Gardener Program or enroll in official university courses.

Results

Two hundred and twenty-one gardeners representing 34 of the 64 parishes responded to the home garden survey. The survey was offered online as well as in print. Home gardeners responded favorably to LSU AgCenter counsel. When asked how often the gardener follows AgCenter advice on vegetable variety selection 47% responded that they did follow the recommendations; insect control and disease control recommendations are followed by 36% and 34% gardeners respectfully. When asked if the gardener follows recommended planting dates and irrigation practices, 41% and 31% of survey respondents indicated that they did. Unfortunately 25% of survey respondents stated that they never use soil test recommendations. Soil testing is a valuable tool that extension agents emphasize to home gardeners to know what kind of fertilizers to incorporate in the soil. Based on this survey we will determine new approaches to communicating the need for such tests. It must be noted that soil tests are a paid for service at the LSU AgCenter. Since many home gardeners are gardening to supplement food supply, they may not have the resources to pay for the test. Others may not use fertilizers and some just do not feel the need to do so. When asked why hobby gardeners spend time in the garden, 70% responded that the vegetables they produce are fresher than those for sale, 63% feel their vegetables are better quality and 88% garden for pleasure or pastime. Gardeners feel the value of the crops they produce in their garden ranges from $5 to $2500 with the average garden size of 650 sqft reported. 52% of respondents reported the year 2017 was average in terms of production. While gardeners can grow and harvest year round in Louisiana, fall and spring were the reported two seasons that most gardeners were actively engaged in the garden. The main gardener in Louisiana households was overwhelmingly female and of all gardeners the

gardens were equally divided into urban, rural and suburban settings.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{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%	12%	0%
601	Economics of Agricultural Production and Farm Management	0%	3%	10%	3%
602	Business Management, Finance, and Taxation	0%	50%	14%	50%
607	Consumer Economics	0%	10%	0%	10%
608	Community Resource Planning and Development	20%	15%	0%	15%
610	Domestic Policy Analysis	0%	5%	0%	5%
721	Insects and Other Pests Affecting Humans	10%	0%	10%	0%
722	Zoonotic Diseases and Parasites Affecting Humans	0%	2%	8%	2%
723	Hazards to Human Health and Safety	10%	0%	11%	0%
801	Individual and Family Resource Management	0%	0%	7%	0%
802	Human Development and Family Well-Being	0%	5%	5%	5%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	50%	5%	8%	5%
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	10%	0%	5%	0%
805	Community Institutions and Social Services	0%	0%	10%	0%
903	Communication, Education, and Information Delivery	0%	5%	0%	5%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	5.0	8.0	2.0	2.0
Actual Paid	3.9	5.9	2.9	2.6
Actual Volunteer	0.0	0.2	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**
194419	231584	92008	147330
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
194419	201233	92008	132234
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
579028	0	1055326	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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

Economic & Community Development

• Planning, market assessment, management, and marketing strategies for established businesses. The Annual Procurement Conference brought large and small businesses, potential and current business owners, government (Federal, State and Local) and others together to interact, network, learn and exchange ideas.
• Strategic planning for community leaders and residents in the targeted areas
• Provide assistance to existing organizations to strengthen links between businesses, community based organizations and outreach education.
• Assist local farmers and other producers to develop alternative enterprise initiatives for rural businesses. Encourage the development of agribusinesses to include utilization of niche markets (vegetables, organic products pasture-raised poultry and beef, ag tourism and eco-tourism, etc.) for agricultural producers.
• Grant writing workshops to empower individuals, businesses and communities to enhance their skills on how to write for and obtain successful grants.
• Procurement conference for business owners and potential business owners in collaboration with local, state and federal agencies.
• Building/enhancing coalitions for business development and expansion.
• Provide education and training for low skilled individuals to prepare them for the job market.
• Develop community leaders through the Building Opportunities through Leaders Development (BOLD) program. BOLD was 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) enables communities and parishes (counties) in rural America to work together in developing and implementing an 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 educates homeowners and building industry professionals about building hazard-resistant, resource-efficient, healthy homes.

• Disaster Recovery and Mitigation reaches 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 builds 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 include storm surge and flood modeling that reflect projected conditions (sea level rise and subsidence) and the uncertainties of levee protection. The program also detects 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 are 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 include: 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 focus on the southern third of the state (hurricane prone region).

• Sustainable housing, flood mitigation, hazard mapping, community resilience and agrosecurity are statewide.

• Housing and risk awareness programs target building and hazard management industry professionals (and their associations); their clientele and youth.

• Agrosecurity engages producers of food commodities and agribusiness.

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

• BOLD program targets rural leaders especially the underserved.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	44252	765106	7615	0

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

Patent Applications Submitted

Year: 2017

Actual: 1

Patents listed

Wang AG-2016-042-02

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	3	37	40

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2017	1334777

Output #2

Output Measure

- Number of LaHouse Resource Center visitors

Year	Actual
2017	1974

Output #3

Output Measure

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

Year	Actual
2017	2702

Output #4

Output Measure

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

Year	Actual
2017	535

Output #5

Output Measure

- Number of LaHouse Facebook followers (Likes)

Year	Actual
2017	700

Output #6

Output Measure

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

Year	Actual
2017	5

Output #7

Output Measure

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

Year	Actual
2017	435606

Output #8

Output Measure

- Number of educational program activities

Year	Actual
2017	739

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.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana suffered economically and socially as a result of several previous natural disasters (hurricanes and floods), oil spill, etc. These factors had devastating impact on business expansion growth and investment. The state was ranked among the top five states for persistent poverty, unemployment 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 a lack of access to education, access to broadband internet connectivity, adequate healthcare, and persistent poverty. At least 20 percent of residents are poor based on results from the last three U.S. Censuses (1980, 1990, and 2010) as well as the interim census of 5-year estimate known as the American Community Survey. Rural poverty is a longstanding issue in America both in terms of its spread and persistence raise. The USDA/NIFA, local communities and the SU economic development research team care about prosperity of rural America. Evidence suggests that 90 percent of rural parishes in Louisiana experience persistence poverty

What has been done
One response was to identify issues and potential solutions related to local economic development in selected and strategic parishes (counties) to include St. Landry, Tensas and Lafayette. This was a university-community engagement approach to promoting wealth creation, human development, and social mobility in rural Louisiana. We organized surveys and focus group interviews and discussions to learn from communities? experience, to listen to their stories, to identify major issues that disserve immediate attention, to discuss potential solutions within a participatory approaches. Participants included elected officials (Mayor President, State Senator, School Board Members, and Chief Police), business leaders, teachers, health care professionals, community leaders, youth, senior citizens, and private citizens.

During FY 2017, we also conducted the following: worked with profit and non-profit organizations to strengthen links between businesses and community-based organizations; assisted small businesses with planning, market strategies/assessment, and management; assisted area local farmers to develop alternative enterprise initiatives. In addition, 31 technology outreach workshops were conducted with 2,875 persons in attendance. Microsoft Office Excel, Quick Books, Access, Publisher and E-Business seminars are also continuing in seven Louisiana rural parishes. In collaboration with community organizations, 130 computers with access to the internet are available in 13 locations mainly in rural areas to serve over 3,500 users. Additionally, our education mobile unit served as a vehicle to educate and assist citizens in:

-Major Steps in Starting a Business
-Understanding the Starting of a Cooperative Organization
-Non-profit Organization Start-up
-Creating a Business Plan for the Farm & Business
-Electronic Submission of Grants
-Business start-up and expansion
-Business tax and individual tax returns preparation

Furthermore, the annual procurement conference was conducted and brought together over 370 participants with business owners (including government agencies) and potential business owners in attendance

Results

The communities of Tensas Parish, St. Landry Parish, and Lafayette Parish came together to discuss issues, share stories and experiences, decide the way to move forward with more community collaboration and involvement, and propose solutions for improving the current situations and look forward to designing community vision and strategies for the next one or two decades. A task force will be established to continue implementation and monitoring of progress. The 130 computers with internet access available in 13 locations and used by over 3,500 individuals saved those users over $110,000 in annual bills payment. At the 2017 Procurement Conferences where 370 business owners and potential business owners participated, 96 percent respondents to a survey indicated that they gained knowledge and skills while 95 percent said knowledge and skills gained would be useful to their organizations in areas such as grant writing, evaluation, leadership, strategic planning, etc. A business owner we assisted in loan SBA application process was awarded $300,000. The business will employ about 20 people. Some 16 businesses were assisted in preparing loan application packages. Participants in the Microsoft Office Excel workshops, Quick Books, Access, Publisher and E-Business seminars are utilizing knowledge and skills gained to enhance their businesses, family and personal well-being. With the assistance of our staff, 35 procurement contracts in construction and home renovation were awarded to several small contractors. In addition, The Center assisted 36 new businesses with startup which created and retained 43 jobs or in the state.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation
608	Community Resource Planning and Development
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

Outcome #2

1. Outcome Measures

Individuals, families, 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
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Louisiana suffered two massive flooding disasters in 2016 -- in north La. in the spring and 20 parishes of south central La. in August from historic rainfall. The August flood damaged an estimated 150,000 homes and only about 20% of the owners had flood insurance. Many flood victims had never flooded before. The predominant construction type is slab on grade with brick veneer which poses difficult restoration issues. Confusion and conflicting information was rampant, along with great concern about mold and financial implications for families and communities.

What has been done
Following both floods, news releases about home restoration Extension publications and the new detailed Rebuild Healthy Homes pdf and mobile app (authored by LSU AgCenter faculty for HUD for national use) were sent to media and agents.

During the Aug. flood, despite the closure of LSU, new articles about dealing with flooded homes and mold were written and released to the media during first week, and a new "Storm Damage Cleanup Highlights" publication was developed, posted online and printed by 2nd week. This and other relevant Extension publications were provided to affected parish offices for distribution.

LaHouse housing faculty presented on panels at 12 public forums and expos, providing guidance

and answers to questions on home clean-up, mold, lead based paint, damage assessment, and structural restoration. Housing and Pesticide Safety specialists also presented at 5 contractor and real estate investor meetings to provide science based recommendations and answers on decontamination, rebuilding issues and legal limitations. Microbial certification training was added to the LaHouse 3-day Mold Control and Remediation course and conducted twice to meet flood induced demand.

Following an avalanche of questions from homeowners and contractors, the LaHouse team consulted with colleagues and developed FAQs After Gutting Your Flooded Home, a sequential list of 23 questions and answers to provide restoration options with considerations (risks, limitations and advantages). A Flood Recovery link was added to the LaHouse Resource Center website homepage, for easy navigation to the FAQs and other recovery publications. The FAQs were also posted to Facebook and key ones boosted to expand reach. These new home recovery resources were then shared with Florida and North Carolina Extension colleagues following hurricane Mathew in Oct.

Results

Approximately 1,000 flood victims who sought guidance at live community events or LaHouse, plus 1580 readers of the online FAQs- After Gutting Your Flooded Home learned how to minimize health hazards, prevent structural degradation, avoid costly mistakes, and improve resilience, energy efficiency and health as they restore their damaged homes within their capacity and limitations.

Approximately 330 housing professionals (contractors, designers, building officials, real estate investors) gained knowledge and answers to provide cost-effective home restoration services to clients and avoid health, structural and liability hazards. Among them were 70 contractors who learned safe and effective mold remediation protocols and microbial pesticide safety, meeting the La. education requirement to obtain a Mold Remediator license and Microbial Applicator certification and help meet the high need for this service. Also among them were 100 contractors who obtained EPA Lead Safe Renovator certification, meeting a legal requirement and protecting their customers from lead based paint poisoning hazards.

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

Not Reporting on this Outcome Measure

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 mentioned in the overview, the state of Louisiana continued to grapple with the aftermath of the four major flood events of 2016 which caused very significant negative impacts in the life of citizens. In FY 2017, we continued to devote substantial amount of resources to assist in flood recovery efforts. Some resources such as personnel, were used to assist displaced citizens including youth. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project especially during the first half of the year. With some assistant, some individuals and families are still struggling to complete the rebuilding of their homes.

The state budget problems continued to impact negatively on our ability to implement planned activities during the period and truly caused Southern University to be unable to meet federal mandatory 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 # 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%	20%	12%	20%
402	Engineering Systems and Equipment	0%	0%	41%	0%
403	Waste Disposal, Recycling, and Reuse	50%	60%	5%	60%
404	Instrumentation and Control Systems	0%	0%	7%	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%	0%	0%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	1.0	5.0	6.0
Actual Paid	0.0	1.3	5.1	4.4
Actual Volunteer	0.0	0.0	0.0	0.2

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
204	150894	161807	273110
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
204	91275	161807	231300
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
606	0	1855918	1466

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. Empowered community leaders and residents in the targeted areas to develop strategic plans for optimum utilization of natural resources.
5. Communicated and disseminated research findings about sustainable energy to consumers through extension personnel in the form of publications, conferences, workshops, field days, home/office visits, demonstrations and other educational resources.
6. Organized grant writing workshops to empower individuals, businesses and communities enhance their skills on how to write for successful grants.
7. Collaborated, cooperated and partnered with local, state and federal agencies, institutions, groups, private organizations/associations in seeking and delivering services to citizens.
8. Encouraged community organizations and resident involvement in developing plans for sustainable energy. 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 includes 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 targets 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?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	337	2806	0	0

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

Patent Applications Submitted

Year: 2017

Actual: 3

Patents listed

Vincent AG-2015-18-02
Wu AG-2017-009-01
Wu AG-2017-006-01

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	0	17	17

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2017	178918

Output #2

Output Measure

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

Year	Actual

2017	4

Output #3

Output Measure

- Number of agricultural producers providing biomass as feedstock for fuels

Year	Actual
2017	447

Output #4

Output Measure

- Number of educational program activities

Year	Actual
2017	18

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

   Not Reporting on this Outcome Measure

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 mentioned in the overview, the state of Louisiana continued to grapple with the aftermath of the four major flood events of 2016 which caused very significant negative impacts in the life of citizens. In FY 2017, we continued to devote substantial amount of resources to assist in flood recovery efforts. Some resources such as personnel, were used to assist displaced citizens including youth. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project especially during the first half of the year. Some individuals and families are still struggling to complete the rebuilding of their homes.

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	23%	20%	0%	20%
806	Youth Development	77%	80%	0%	80%
	Total	100%	100%	0%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	48.0	8.0	0.0	0.5
Actual Paid	37.7	9.5	0.0	0.0
Actual Volunteer	0.0	0.9	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
1882707	404805	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1882707	359951	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
5607174	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 and entrepreneurship (SU AgCenter). Programs focus on the development of four essential elements in youth--belonging, independence, mastery and generosity. In this state, 4-H continues to offer a broad range of learning opportunities for youth, including but not limited to, traditional school club programs, school enrichment activities and community service learning. Delivery of educational programs other than in-school clubs was emphasized. Youth were guided in developing skills that result in effective decision-making, planning, and interacting with others.

Examples of specific educational activities included:

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

2. Brief description of the target audience

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

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	192684	625549	530806	1260600

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

Year:	2017
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	20	6	26

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Web page views

Year	Actual
2017	735584

Output #2

Output Measure

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

Year	Actual
2017	101

Output #3

Output Measure

- Number of youth engaged in service projects

Year	Actual
2017	12491

Output #4

Output Measure

- Number of hours of service performed by youth

Year	Actual
2017	41786

Output #5

Output Measure

- Number of educational program activities

Year	Actual
2017	12866

Output #6

Output Measure

- Number of youth enrolled in camp counselor training

Year	Actual
2017	321

Output #7

Output Measure

- Number of volunteers enrolled in risk management training

Year	Actual
2017	225

Output #8

Output Measure

- Number of volunteers enrolled in 4-H military partnership program risk management training

Year	Actual
2017	89

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
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
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. 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 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.

What has been done
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 six participants each year to travel to Washington, DC to expose them to experiences in national level political and governing 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 2017, six more youth participated and in the past four years a total of 24 youth (and 23 adult chaperons) have participated and gained significant knowledge and understanding of the U.S. Government. The 1-week trip usually include visits to Congress, the White House, Federal Government Departments, Museums, and other valuable learning sites in Washington, D.C., Maryland and Virginia. SU Ag Center faculty and staff collaborated to receive grants to organize local, statewide and national exposure to provide educational activities to benefit youth.

Results

* 100 percent of youth who participated indicated that they gained tremendous 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.
* 90 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 in FY 2017 received additional grants in the amount of $411,251 to assist in youth development activities.
* Faculty and staff expanded outreach via social media to reach youth using, Twitter, Facebook, Instagram and other electronic messaging techniques.
* In addition, 7 adult volunteers assisted during the experiential learning tours donating a total of 1,680 hours of their time (approximately $25,200).

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

Outcome #2

1. Outcome Measures

Youth are engaged as contributing citizens within their community.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Selecting a career path is one of the most challenging decisions an adolescent makes, and it is one that is often complicated by not knowing how to make such an important, life-changing choice. When youth face barriers like the increasing cost of post-secondary training or a lack of support from family or peers, the decision becomes even more difficult. It is not uncommon for youth to be unsure about the steps that they should take in making a career choice. Additionally, the internet and other sources can provide too much information for youth to sort and organize so that a decision can be made. In the face of all these hurdles, youth often rely on informal sources of information and their own experiences to make a career path determination.

What has been done

The programs offered by Louisiana 4-H play an important role in adolescents' career exploration process and provide a natural complement to the work of local school systems. Many 4-H programs include an intentional career component, like field trips and visits with adults working in industry, retail, professional, and academic career paths. Youth have the opportunity to ask questions and to experience the work first-hand. For this evaluation, all youth were actively engaged in educational club meeting lessons. Some youth also had access to additional field trip opportunities and job shadowing experiences. The purpose of this study was to determine if changes occurred in 4-H club members' career decision-making confidence as a result of their participation in the club program. Data were collected from a cross-section of 144 9th-12th graders 4-H club members. Youth ranged in age from 12 to 18 years old (M = 13.9). Males (42.6%) and females (57.4%) were fairly equally represented. A 14-item retrospective pretest questionnaire was adapted from the Middle School Self-Efficacy Scale (Fouad & Smith, 1997) and was distributed to youth in the spring after the club educational program was complete. A retrospective pretest questionnaire collects both pretest and posttest information at a single point in time. Responses were collected using a 4-point, Likert-type scale with responses ranging from strongly disagree to strongly agree.

Results

Two mean values representing pretest and posttest levels of confidence were created for each youth's responses to the 14 items. Youth reported lower confidence levels at pretest (M = 2.94) and higher confidence levels at posttest (M = 3.45). There was a statistically significant increase in the mean from pretest to posttest ($p < .001$). Making a career choice is one of the most important decisions that a person makes. Programs like the Louisiana 4-H program can help increase adolescents' confidence that they can make a decision and that they know the appropriate actions to take in making the choice. Results of this program suggest that when youth engage in intentional career exploration programs, their confidence to make a decision increases. As the Louisiana 4-H program expands its focus to better meet the needs of today's youth, programs like the educational club program can fill an important niche in the lives of youth.

4. Associated Knowledge Areas

KA Code	Knowledge Area

806 Youth Development

Outcome #3

1. **Outcome Measures**

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

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 mentioned in the overview, the state of Louisiana continued to grapple with the aftermath of the four major flood events of 2016 which caused very significant negative impacts in the life of citizens. In FY 2017, we continued to devote substantial amount of resources to assist in flood recovery efforts. Some resources such as personnel, were used to assist displaced citizens including youth. Temporary relocation of individuals, schools and families in the target areas caused disruption in the focus of the project especially during the first half of the year. With some assistant, some individuals and families are still struggling to complete the rebuilding of their homes.

The state budget problems continued to impact negatively on our ability to implement planned activities during the period and truly caused Southern University to be unable to meet federal mandatory 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)	
487	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)	
34	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.