

FY 2020 Annual Report of Accomplishments and Results

LOUISIANA
Louisiana State University Agricultural Center - Research
Louisiana State University Agricultural Center - Extension
Southern University Agricultural Research and Extension Center - Research
Southern University Agricultural Research and Extension Center - Extension

I. Report Overview

The NIFA reviewer will refer to the executive summary submitted in your FY 2020 Plan of Work located in the Institutional Profile. Use this space to provide updates if needed.

1. Executive Summary (Optional)
<p>FY 2020 was like no other year that we have experienced; the ravages caused by the Coronavirus (a.k.a., COVID-19) pandemic disrupted our research and extension activities for over half of the fiscal year. The restrictions and shut down did not allow us to implement most of our planned programs especially the in-person activities. It took some time to recover, adjust, and adapt to the unexpected situation. We implemented virtual outreach activities which our citizens were able to utilize to address their needs.</p>

II. Merit and Scientific Peer Review Processes

The NIFA reviewer will refer to your 2020 Plan of Work. Use this space to provide updates as needed or activities that you would like to bring to NIFA's attention.

Process	Updates ONLY
1. The <u>Merit Review Process</u>	No updates
2. The <u>Scientific Peer Review Process</u>	No updates

III. Stakeholder Input

The NIFA reviewer will refer to your 2020 Plan of Work. Use this space to provide updates as needed or activities that you would like to bring to NIFA’s attention.

Stakeholder Input Aspects	Updates ONLY
<p>1. Actions taken to seek stakeholder input that encouraged their participation with a brief explanation</p>	<p>No updates</p>
<p>2. Methods to identify individuals and groups and brief explanation.</p>	<p>A determined effort was made to allow various individuals of diverse age, racial, ethnic, gender, and educational backgrounds to participate in the process by rotating advisory committee members while maintaining equal representation of the target audience on the stakeholder committees. Listening sessions and focus groups also provided opportunities to identify individuals and groups to participate in providing stakeholder input.</p>
<p>3. Methods for collecting stakeholder input and brief explanation.</p>	<p>No updates</p>
<p>4. A Statement of how the input will be considered and brief explanation of what you learned from your stakeholders.</p>	<p>The major means of utilizing stakeholder input continued to involve assisting faculty and staff in identifying emerging issues and in evaluating ongoing programs. For instance, we continued to redirect research and extension programs activities to include safety during pandemic, hemp, and medicinal plant/functional food. Stakeholder advisory input, information from listening sessions, etc. helped to redirect resources to include the aforementioned programs activities. The SU and LSU Ag Centers increased the establishment of school gardens to help provide fresh vegetables especially in areas designated as food deserts, boost physical activities, educate youth about healthy living and improve health.</p>

IV. Critical Issues Table of Contents

No.	Critical Issues in order of appearance in Table V. Activities and Accomplishments
1.	Family and Community Development Obesity, Health & Wellness
2.	Food Security and Systems Natural Resources & Environmental Sustainability
3.	Natural Resources & Environmental Sustainability Family and Community Development
4.	Obesity, Health & Wellness
5.	Youth Development

V. Activities and Accomplishments

Please provide information for activities that represent the best work of your institution(s). In your outcome or impact statement, please include the following elements (in any order): 1) the issue and its significance (e.g. who cares and why); 2) a brief description of key activities undertaken to achieve the goals and objectives; 3) changes in knowledge, behavior, or condition resulting from the project or program’s activities; 4) who benefited and how. Please weave supporting data into the narrative.

No.	Project or Program Title	Outcome/Impact Statement	Critical Issue Name or No.
1.	Family and Community Development: Evaluating and Addressing Financial Literacy and Financial Stress	For several decades, college costs have outpaced income growth, forcing a majority of students and their families to use student loans to finance college. Today, educational loans have become the primary way to pay for college; an estimated 45 million Americans have student loan debt; and long-term delinquency rate on that debt exceeds 10 percent (Federal Reserve Bank of New York). Coupled with these factors is the low levels of financial and student loan literacy among many college students which have caused some of them to borrow far more money for college that they will be able to repay from future earnings. Researchers also have suggested that student loan debt could potentially become a drag on the economy because it could limit many borrowers from obtaining	Family and Community Development

		<p>mortgages or from accessing other sources of credit in the future. A majority of the students attending our institution rely on loans and grants to cover their educational costs.</p> <p>Prior to the COVID 19 pandemic, many borrowers reported that they were experiencing difficulties repaying their student loan debt. Given the pandemic and subsequent job losses since March 2020, it is quite possible that many of these borrowers are experiencing higher levels of financial stress than previously reported. The project was undertaken to determine students' levels of financial knowledge and financial stress, and to enhance their financial literacy levels.</p> <ul style="list-style-type: none"> • Low levels of financial literacy and high levels of financial stress among college students can result in serious health problems, absenteeism, and withdrawal from college, among others. Therefore, educators need to help students to become more financially literate. • Overall, 90% of students attending the university receive some type of financial assistance; previous studies suggest low levels of literacy among students. • Our target audience consists of undergraduate and graduate at Southern University and A&M College. • The SU Ag Center research project team developed, pretested, and executed a survey instrument to a selected group of undergraduate and graduate students, and analyzed the preliminary data. • The activities took place at Southern University and A&M College in Baton Rouge, Louisiana between October 2019 and March 2020. Undergraduate and graduate students participated in the study, and to date, 132 students have participated in the study. <p>- Topics discussed were as follows:</p>	
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		<ul style="list-style-type: none"> • The survey covered the following topic. • Self-Assessments of Financial Literacy and Self-Efficacy • Budget • Credit and Debt Repayment • Saving, Investing, Insurance, and Taxes • Student Loan and Loan Literacy • Financial Stress and Related Measures • Demographic Characteristics <p>To execute the survey, we collaborated with faculty members in the SU Honors College, SU Departments of Biological Sciences, Agricultural Sciences, and Family and Consumer Sciences, and with faculty in the SU School of Public Policy.</p> <ul style="list-style-type: none"> • Based on the content of the survey, participants should have increased their awareness of issues related to budgeting, credit, debt, saving, investing, and ramifications of student loan debt, among others. • Preliminary data were assessed using descriptive statistics and Chi-square tests for independence. The average score on the quiz questions in the survey was 53%; about 60% of the participants worried about paying for college. These results suggest that students need help with financial literacy and with paying for college. <p>Several graduates from the agricultural economics/agribusiness program have told us that the financial materials we taught and/or distributed helped them to make better spending and investing decisions. We will continue to use these strategies in the current project.</p>	
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<p>2.</p>	<p>Family and Community Development: Health Literacy</p>	<p>The following statements from the Kelly Report 2015, Health Disparities in America echoes the issues and significance of this project. “History has shown us that the lack of access to healthcare, health insurance, and health providers has contributed to the gaps we observe in national health outcomes. (America cannot truly be a healthy nation until we cure our nation of health disparities and address the underlying social determinants that cause them. Many of the gaps that exist in public health are shaped by generations of cultural bias, injustice, and inequality. Today in America, minorities experience higher rates of infant mortality, HIV/AIDS, and cardiovascular disease than Whites, and substantial differences in disease incidence, severity, progression, and response to treatment.</p> <p>African Americans have higher rates of mortality than any other racial or ethnic group for eight of the top ten causes of death. Cancer rates for African Americans are ten percent higher than those for Americans of European descent. African Americans make up more than one third of all U.S. patients receiving dialysis for kidney failure despite representing only 13 percent of the overall U.S. population, and African American are nearly two times more likely to have diabetes as non-Hispanic Whites. Latinos have higher rates of preventable diseases than non-Hispanic Whites. More than 77 percent of Latino adults are overweight or obese, compared with 67.2 percent of Whites. Latinos are 15 percent more likely to have liver disease than non-Hispanic Whites....”</p> <p>Health disparities in Louisiana is a snapshot of the national statistics.</p> <p>The purpose of the health literacy program was to help focus and improve on the family health of minorities and the baby boomer populations statewide. The program addressed health literacy, records and prevention for the individuals and their families. It focused on developing health literacy programs and learning how to lower the financial burden of healthcare through prevention.</p> <p>Information was provided on preparing for disasters, financial literacy, nutrition and health to the public through several methods including virtual programs, social media, newspaper articles, mail outs and phone calls.</p>	<p>Family and Community Development</p>
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		<p>One health literacy conference was held at Southern University main in Baton Rouge, Louisiana with over 79 participants who learned various ways and techniques to maintain good health.</p> <p>We helped family adopt recommended practices of creating a health history journal using generations of family health conditions and illnesses. To increase family health and wealth practices we collaborated with Zeta Phi Beta Sorority, Inc-Mu Zeta Chapter during Senior Thanksgiving Luncheon to provide literacy information to over 300 senior citizens and their families.</p> <p>Other activities conducted around the state were:</p> <p>Nutrition and Healthy Aging event in collaboration with the Zachary AARP where 36 attendees learned way to improve family health and wealth practices.</p> <p>Personal Health History Workshop at the Northshore Technical Community College in Greensburg, Louisiana, 60 participants learned the importance of knowing family medical history, getting the most from each doctors' visit, difference ways to live well, eating healthy at every age, and harmful effects of tobacco.</p> <p>Over 21 individuals in St. James Parish (county) participated in a virtual lesson on the importance of reducing salt intake; and 100 individuals received recipe handouts at The Life House Food Bank in St. James Parish. 350 senior citizens and their family members attended the Lifestyle Expo, conducted in collaboration with the Council on Aging. Some topics discussed were, bone and joint health; rheumatoid arthritis and other bone & joint conditions; eating healthy to help manage my bone & joint conditions; etc.,</p> <p>Participants learned and understood the importance of health literacy in maintaining good health.</p> <p>Participants were taught to and they developed their family health history. Develop knowledge and skills on how to record health information and immunizations</p> <p>Participants to improve family resiliency in response to long term stress and crisis.</p>	
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2020 Annual Report of Accomplishments and Results (AREERA)

		<p>There was an increase in the knowledge of how to safely preserve foods at home. More families learn how to complete their emergency plans. Information from surveys conducted during the conference/workshop indicated as follows: 100% said that topics discussed were relevant to their needs. 100% said that knowledge and skills gained will be useful and applied to my daily activities. 100% said that attending the conference/workshop motivated me to try new ideas.</p> <p>Louisiana citizens especially the adults and senior citizens said that they benefited from their participation in our activities. 100% said that topics discussed were relevant to their needs. 100% said that knowledge and skills gained will be useful and applied to my daily activities. 100% said that attending the conference/workshop motivated me to try new ideas.</p>	
<p>3.</p>	<p>Resilient Communities and Economies: Learning Everyday about Development and Leadership</p>	<p>Most of our community leaders and elected officials do not have formal training and/or instruction in development and leadership. Such training is a critical skill which had not been offered to them small, limited resource agricultural producers in the state of Louisiana (and possibly in the country). Economic crisis in Louisiana over the past two decades, especially the high cost of farm inputs during FY 2019 made it difficult for producers to compete and remain profitable. The existence of many small farmers is in serious jeopardy as they are debt-ridden and are on the verge of being bankrupt. The Small Farmer Agricultural Leadership Training Institute at Southern University Agricultural Research & Extension Center was designed to address these needs with the goal of promoting small & family farm sustainability, survival and profitability through enhanced decision making skills and leadership development. The goal was to help farmers become better leaders while enhancing their</p>	<p>Family and Community Development</p>

		<p>overall farm management skills. The Louisiana Small Farmer Leadership Institute was modelled after the National Institute which has been recognized in the United States and abroad.</p> <p>Five leadership sessions were planned for FY 2020 but, due to the pandemic lockdown two were actually conducted in St. Gabriel, October 2019 and Ponchatoula/Winnsboro, December 2019 during the period using full day intensive training workshops and presentations. Some of the topics discussed were; Moving your Community Forward Using Programs and Initiatives; Prospering Your Community through External Programs; Transforming communities; Growing Your Small Community; Empowering Communities; and Strengthening, empowering and financing rural/small communities.</p> <p>These activities were conducted in collaboration with, USDA/Office of Partnerships and Public Engagement; USDA/Natural Resources and Conservation Service, USDA/Rural Development, USDA/ Farm Service Agency, USDA/National Agricultural Statistics Service, Louisiana Economic Development, Office of Community Development, and Louisiana Main Street. A total of 63 community leaders/elected officials attended the sessions.</p> <p>They also gained knowledge and skills on using modern technology to operate and manage communities; value added strategies and Techniques; and diversifying community operation through programs and initiatives.</p> <p>The survey of participants showed the following results:</p> <ul style="list-style-type: none"> • 100% of the participants said that with the help of the sessions, they will actually try new ideas which they hope will yield good results. • 100% of the respondents said that they gained useful knowledge on unlocking previously untapped resources. 	
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		<ul style="list-style-type: none"> • 93% gained vital knowledge on how to enhance their communities through grants. • 89% gained new knowledge and inspiration/motivation on the topics dealing with community development meets STEM and the initiatives used to develop community economically. • Participants gained skill on community development techniques and STEAM mentoring. • 100% of Participants gained knowledge on resources available and realization of private/public partnerships. <p>Most of our community leaders and elected officials in attendance gained knowledge and skills which they said would definitely benefit the economic and community development of their citizens.</p>	
4.	Horticulture	<p><u>Nutrition and School Gardens Programs with Early Elementary Students</u></p> <p>School gardens create opportunities for students to learn, grow, and play. “Through school gardening children can learn science, mathematics, English, environmental studies, health, family and consumer sciences and art. They learn first-hand about plants, nature and the outdoors, and they learn how fresh food is grown.” (Motsenbocker, C. & E. Neustron, 2009)</p> <p>School gardens provide a living laboratory where learning comes alive. School gardens excite students and motivates them to try fruits and vegetables. And, because they are responsible for planting, caring for, and harvesting the fruits and vegetables, they are more likely to sample them. Besides creating a positive attitude towards fruits and vegetables, school gardens also provide opportunities for physical activity- whether that is preparing the beds, raking, watering, weeding, etc. Studies show that school gardening increases self-esteem, helps students develop a sense of ownership and responsibility; helps foster relationships with</p>	Food Security and Systems

		<p>family members, and increases parent involvement (Alexander, J. & D. Hendren, 1998).</p> <p>A five-week nutrition and school garden series reaching 175 kindergarten students and 175 first graders weekly was conducted. Topics included: Rules & Tools of Gardening, Go, Slow, & Whoa Snacks, MyPlate, Fight BAC! (teria)- hand washing and food safety, and Grains. Because of the nutrition and school garden classes, activities, and tastings, kindergarten and first graders not only made a connection to nature but also were exposed to healthy foods. Planting seeds and transplants then caring for the plants by weeding and watering, increased the student’s willingness to try vegetables they grew in the school garden. Students harvested radish and turnips. They sampled radish, green onion, and mint. The turnips were cut and frozen to be added to an ABC Soup in the spring. After each nutrition and school garden class, students were given nutrition fact sheets and healthy tips sheets to take home to their parents/guardians. The resources were used to reinforce the lesson being taught in the garden that day as well as to educate the parents/guardians. Over 300 carrots with harvested and shared with local food pantries.</p> <p>Surveys were distributed to first grade program participants using paper pretests and online (Qualtrics-based) posttest surveys. Matched pretest and posttest responses were received from 37 participants. An assessment of knowledge in three areas (nutrition, physical activity, and garden) was conducted. For the three, knowledge-based, paired-samples t-tests, alpha was set at 0.017 to adjust for the family-wise error rate. All three assessments of knowledge showed statistically significant increases from pretest to posttest:</p>	
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		<p>* Nutrition knowledge (Pretest M = 64.59 (SD = 22.59); Posttest M = 95.68 (SD = 10.68); p < 0.001),</p> <p>* Physical activity knowledge (Pretest M = 82.86 (SD = 38.24); Posttest M = 100.00 (SD = 0.00); p = 0.012), and</p> <p>* Garden knowledge (Pretest M = 62.61 (SD = 39.28); Posttest M = 91.89 (SD = 16.49); p < 0.001).</p> <p>Three assessments of students’ liking of vegetables, willingness to taste new fruits and vegetables, and liking of fruit were conducted. A Wilcoxon signed ranks test was used to evaluate differences from pretest to posttest. Alpha was set at 0.017. There was no statistically significant change from pretest to posttest which could be an artifact of the shortened time frame for the program.</p> <p><u>Consumer Turfgrass Management</u></p> <p>Turfgrass management programs that target Louisiana homeowners and Master Gardeners are a valuable conduit for addressing the impact of consumer choices on the environment. The extension turfgrass program reaches a variety of consumers and producers through their participation in Master Gardener, Master Cattleman, and general interest turfgrass presentations. For federal FY 17 through FY 20, individuals were reached through 87 program activities. A pretest (Mdn = 2.0) and posttest (Mdn = 4.0) assessment of weed management knowledge was conducted (N = 10). A related-samples Wilcoxon-signed rank test indicated a statistically significant increase, large change in knowledge (T = 55, p = .004, r = 0.64).</p>	
<p>5.</p>	<p>Food Safety: Enhancing Produce Safety for Under-Served Farmers</p>	<p>Foodborne illnesses caused by over 30 major pathogens are estimated to affect approximately over 9 million people in the United States every year. Millions of people become sick every year after eating food contaminated with pathogenic bacteria or their toxins, or through personal contact with people exposed to foodborne pathogens. Most</p>	<p>Food Security and Systems</p>

		<p>cases of foodborne illness can be prevented through hygienic practices such as handwashing and by routinely following proper food handling and preparation recommendations. However, recent outbreaks of foodborne illness associated with fresh produce such as lettuce and spinach underscore the importance of preventing contamination at all levels of farm to table. It is vitally important that consumers properly wash their hands before handling food and they understand the reasons for proper handwashing. Educating public about following proper food safety practices are crucial. Food safety is a critical necessity for any dining and serving food experiences. Food safety trainings need to be enhanced through extension programs.</p> <p>In settings such as community events, camps, church dinners, fairs or in child and adult care centers, the individuals responsible for handling food may include volunteers and paid staffs who have inadequate training in food safety. Individuals, including volunteers, school personnel, teachers and staff are often unaware of the risks.</p> <p>SU and LSU Agricultural Centers research programs project directors and co-project directors offered food safety (ServSafe) certification program to the public and Food Handler Trainings. Food safety is a critical necessity for any dining and serving food experiences. The Louisiana Department of Health and Hospitals requires that food facilities have at least one ServSafe certified personnel on board. Also, in order for the food facility owners to pass the health and food safety inspection required by State and Government, they have to have the ServSafe certificate. ServSafe is a food and beverage safety training and certificate program administered by the National Restaurant Association. The</p>	
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		<p>program is accredited by American National Standards Institute (ANSI) and the Conference for Food Protection.</p> <p>Food Handler Training is a 5-week program and participants receive a certificate of completion. In FY 2020, five food handler trainings were conducted and 84 persons received their certificate of completion. Among the certificate recipients, the individuals who were interested in receiving the ServSafe training attended an all-day class, took (and passed) the recommended examination. The examinations were graded by ServSafe and the participants who passed the test received an official certificate from ServSafe which is valid for five years. In addition, we conducted 5 ServSafe trainings and certifications across the state for 25 restaurant owners, mobile food truck owners, school personnel and new food business owners.</p> <p>* Due to the lockdown we were not able to conduct planned activities.</p> <ul style="list-style-type: none"> • Follow-up survey of participants indicated that 100 percent of the participants gained new knowledge and skills and are putting knowledge gained into practice. These individuals are also educating/recruiting other food facility owners/workers to attend the training for certification. • A survey conducted with participants indicated that 100 percent of the attendees in the ServSafe training have made some adjustments in the ways that food are handled in their facilities. • Eighty-four (84) individuals representing several food handling organizations received food handler training and certification. • As a result of the SU Ag Center’s program, 75 food facilities in the state so far have at least one ServSafe certified personnel on board as required by Louisiana Department of Health and Hospitals. 	
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		<ul style="list-style-type: none"> • Sixty-two (62) restaurant owners, mobile food truck owners, school personnel and new food business owners received ServSafe trainings and certifications from different parishes across the state. • Twenty (20) extension agents received ServSafe trainings and certifications in order to educate the citizens of the communities on food and nutrition and healthy food preparation choices. 	
<p>6.</p>	<p>Global Food Security and Hunger: Roselle (Hibiscus), an alternative crop</p>	<p>The global economy and competition have made traditional horticultural crops less profitable. Louisiana’s agricultural industry remains a major economic force making agricultural profitability of utmost importance. Wide variation exists in the profitability and management of farm operations. Small scale producers and business owners faced the greatest challenge of generating sufficient income to produce a reasonable standard of living. Critical issues faced by this audience couple with the hardships of natural disasters like tornado, hurricanes, floods, etc., creates overwhelming challenges for many small farm family operations. The damages cause by natural disasters on small scale producers and businesses infrastructure is one of the main reason for displace employees and damage facilities. The emergence of global marketing and competition for traditional horticultural crops which provide only marginal profitability has motivated SU Ag Center Research project director and co-project directors to focus on Roselle Hibiscus as a non-traditional and niche market crop for limited resource African-American farmers.</p> <p>Research is ongoing about selecting accessions of Roselle Hibiscus (Hibiscus sabdariffa L.) for small farm production in Louisiana, along with the following:</p>	<p>Food Security and Systems</p>

		<ul style="list-style-type: none"> • Evaluate the effects of fertilizer on plant performance, incidence of insect pests and diseases, phytochemical properties and antioxidant capacity of the natural products (calyx and leaf) • Compare the quality of the value-added products derived from various parts of the plant (calyces, whole fruit and whole shoot bearing fruits and leaves). • Conduct consumer acceptability test on value-added products developed from parts of the plant. • Workshops and demonstrations conducted by the project team have promoted the development of value-added products such as roselle jam and jelly, container plants and gift packages that can help boost the income of producers. • Some of the products are sold regularly in the farmers’ markets, sponsored by the Big River Economic and Agricultural Development Alliance (BREADA). <p>Participants in our activities gained knowledge of the medicinal properties of roselle such as high in anti-oxidants, in vitro inhibition of cancer cell proliferation and its ability to reduce hypertension.</p> <p>SUAREC’s Roselle research has become a regular learning venue for the provision of good experiential training to, producers, agricultural science students, etc. in collaboration with Southern Institute of Medicinal Plants.</p> <p>Activities to expose citizens to the health and medicinal value of Roselle in order to increase knowledge were:</p> <p>-Roselle hibiscus research and value-added products were featured in Louisiana State Capital during HBCU Day at the Legislative, 350 participants.</p>	
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		<p>-Promotion on the use of Roselle drink to maintain health conducted for Faculty and Staff Spring Wellness Day at Southern University, 840 participants.</p> <p>-Our Roselle hibiscus research was featured as part of National Earth Day, 2,500 participants.</p> <p>* In 2020, we postponed these activities due to COVID-19 pandemic.</p> <p>Through evaluation research, Southern University has recommended and released four roselle varieties which can be grown successfully in Louisiana.</p> <ul style="list-style-type: none"> • Roselle has become from little known crop for a few groups of ethnic people to a widely recognized plants particularly by the African American communities. • Due to the narrow window of harvesting safety, SU Ag Center is undertaking a photoperiodic manipulation to induce early production to extend safe harvesting and growing period. • The number of home gardeners who choose roselle as one of their home garden crops is steadily increasing. <p>Producers, especially small, limited resource and disadvantaged farmers, faculty, students and staff at Southern University, citizens of Louisiana particularly those from East Baton Rouge and surrounding areas all benefitted. They became aware of Roselle, the products and its values. Many of the clientele served by the SU Ag Center have gained knowledge and practical experiences in growing and using roselle plants in their home gardens, making roselle jam and drinks. Such undertaking was made possible through SUAREC’s effective outreach program. When SU Ag Center clientele were asked about roselle, everyone has exhibited knowledge of the crop.</p>	
7.	Global Food Security and Hunger:	Louisiana’s agricultural industry remains a major economic force in the state thus making agricultural profitability of utmost importance. Wide variations exist in the profitability and management of farm operations.	Food Security and Systems

	<p>Celebrating Quarter Century of A Rewarding Farmers Market</p>	<p>Louisiana’s diverse agricultural economy requires dynamic programming to deal with crops, livestock and natural resource issues, particularly as they pertain to socially disadvantaged farmers, ranchers and low to moderate income families. Small-scale family farms represent nearly 90% of U.S. farms, but only 21.1% of production. Just 14.6¢ of every dollar spent on food in 2018 went back to the farm; in 1975, it was 40¢ (School for Environment & Sustainability, University of Michigan). Small scale producers and business owners faced the greatest challenge of generating sufficient income to produce a reasonable standard of living. This audience faced critical issues coupled with the hardships of selling their commodities created overwhelming challenges for many small limited resource farm operations. This occurs while several areas of the state are classified as food deserts. The biggest problem has been forming a venue where both buyers and sellers could assemble and conduct the exchange function.</p> <p>Faculty and staff from Southern University (Drs. Owusu Bandele, James McNitt, Yemane Ghebreyessus, Adell Brown and Mrs. Milagro Berhane & Zanetta Augustine) and LSU Ag Center (Dr. Carl Motsenbocker) along with then master's student in landscape architecture at LSU Christ Campany, met several times in Baton Rouge, Louisiana between 1995/1996, discussed, and developed a plan to organize farmers and the community with the aim of starting a farmer’s market. About 7-10 small and limited resource producers attended some of the meetings initially. Some of the core values that drove this initiative were: Sustainability of small, family farms through direct sales at Farmers Markets; Stewardship of land and community; Access to local foods for everyone, regardless of income level (https://breada.org)</p> <p>The group also tasked themselves on recruiting farmers who would participate and bring produce to sell in the market. Today, “the Big River Economic and Agricultural Development Alliance, most commonly referred to as BREADA, is a non-profit organization with</p>	
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		<p>headquarters in Baton Rouge, Louisiana. BREADA is the parent organization of the Red Stick Farmers Market and the Main Street Market with over”, with “55 farmers, fishers and chefs who rely on Red Stick Farmers Market for their livelihood”.</p> <p>According to BREADA homepage, 675 local Families receiving fresh local food through the Farm to Work program; 61,000 residents in low access communities provided access to fresh food; 1.2 million people benefit from BREADA’s markets and programs annually; etc.”</p> <p>The producers who attended the planning meetings and the ones who were recruited to participate by bringing their produce to the market learned about forming and patronizing a farmers market. They also learned about the possible costs and benefits of the farmers market. I subsequent months, they came together with the organizers to participate in the “experimental” project. All original participants signed up to be part of the market, and more producers came and joined them. Twenty five (25) years after, the markets are performing very well; closed briefly due to COVID-19 lockdown, the markets re-opened and have been fully operational since.</p> <p>Celebrating twenty five (25) years, the markets are performing very well; closed briefly due to COVID-19 lockdown, the markets re-opened and have been fully operational since.</p> <p>675 local Families receiving fresh local food through the Farm to Work program;</p> <p>61,000 residents in low access communities provided access to fresh food;</p> <p>1.2 million People benefit from BREADA’s markets and programs annually</p> <p>Over \$2 million worth of produce sold annually.</p> <p>The farmers market provides a safe, reliable, and convenient avenue where both buyers and sellers assemble and conduct the exchange</p>	
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		<p>function. The consumers benefit from purchasing fresh and clean products while producers gain by enjoying a large dependable market for their products and practically reliable income.</p>	
<p>8.</p>	<p>Global Food Security and Hunger: Maximizing Forage Utilization for Sustainable Production</p>	<p>Economic crisis in Louisiana over the past two decades, especially the high cost of farm inputs during FY 2019 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 some are on the verge of being bankrupt. Over-stocking on small farm pastures is a widespread problem, with the consequent of overgrazing, reduction of forage output, increased weed burden and costs of purchased feed necessary to cover forage deficits. All these result in low animal output and economic loss to the producers. Recently focus has been given to increased use of warm- and cool-season forages, in order to extend the period of grazing and reduce costs feeding. An optimal and profitable livestock operation scenario is theoretically possible if forage production inputs are not limiting and animal product prices are high. This optimal economic scenario rarely occurs and as a consequence, we must design management systems that are self-sustaining without continual inputs and yet yield sufficiently to feed livestock for optimal growth performance. Mixing grasses and legumes top this list of management options for agricultural systems based on diverse pasturelands. Diverse and mixed pastures can support and improve livestock production and health. This practice also has a number of environmental benefits, including soil conservation and improved nutrient cycling.</p> <p>This multidisciplinary research project evaluated the traditional stands of summer forage (Bermuda grass) mixed with selected warm season legumes during the summer and ryegrass and clover mixtures during the cool season in southern Louisiana. The assumption was that the development of a compatible, persistent, warm- and cool season grass-</p>	<p>Food Security and Systems</p>

		<p>legume mixtures could increase forage yield and quality to improve livestock productivity and profitability.</p> <p>The project team evaluated the agronomic performance, cultural practices and adaptability of selected warm season (perennial peanut, cowpeas, sunn hemp and alyceclover) and cool season (white and red clover) legumes for use in mixed-livestock and mixed-forage grazing systems.</p> <p>The effects of mixed forages on the digestibility, palatability, acceptability, yield and quality of forage crops were studied. In addition, we evaluated the effects of mixed forages on the growth performance, reproductive efficiency and parasitic loads on small ruminants and cattle in stand-alone and mixed-grazing systems.</p> <p>A completely randomized design, 32 goats were randomly assigned to four treatments, Bermuda grass (control, BG), Sudan grass (SG), cowpea (CP) and alyceclover (AC). About 4 hectares (10 acres) was divided into four paddocks. Each paddock was further divided into two pastures, 0.5 ha (1.3 acre) each, to facilitate rotation. Body weight (BW), heart girth (HG), body condition scores (BCS), FAMACHA© scores (FAM), pellet fecal score (FEC) were measured on goats bi-weekly. Blood and fecal samples were collected and analyzed for packed cell volume percent (PCV) and for fecal egg count (EPG). Data were analyzed using SAS MIXED procedure and regression.</p> <p>It is important to note that undergraduate students in both animal science and plant and soil sciences programs received hands-on experiential learning by working alongside research scientists in this study.</p> <p>As a result of this study we observed that significant pasture differences in BCS, HG, BW and PCV were observed. Period of grazing has significant effect on BCS, FAM and EPG. No interaction effects were observed. BCS ranged from 2.8 in AC group to 2.3 in CP. BW ranged from 35.1kg in AC to 29.8kg in CP. Linear and polynomial regression lines were fitted to BCS,</p>	
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		<p>FAM and EPG and respective R^2 were 0.79 vs 0.91; 0.73 vs 0.93; and 0.76 vs.0.21. BW was positively correlated with BCS (0.27) and HG (0.76) and negatively with FEC (-0.17). PCV was negatively related with FAM (-0.45). Results showed that goat in AC and SG performed better in AC and SG both in growth and parasitic loads.</p> <p>Data from previous year were analyzed using SAS GLM procedure; significant forage treatment differences ($P < 0.05$) were observed for BW, BCS, FMS and HG, but not for FEC. Animals in WC and BC pastures were similar to those in RG (control) pasture but significantly different to those in DR and MG pastures. Performance indicators showed that animals in RG, WC and BC pastures performed better than those in DR and MG pastures. Similar studies on mixed pastures support these findings although different forage pasture mixes were used. The potential of clovers as winter forages should be explored in more detail in the future. Students who received hands-on experiential learning by working alongside research scientists in this study gained substantial knowledge and skills on how to plan and conduct a multidisciplinary research, collect, assemble, and analyze data, and prepare manuscript for presentation/publication.</p> <p>The findings of this study were shared with 90 producers, and extension personnel during the annual Small Ruminant Field Day conducted jointly by Southern University and Louisiana State University Agricultural Centers. Students who received hands-on experiential learning by working alongside research scientists in this study gained substantial knowledge and skills on how to plan and conduct a multidisciplinary research, collect, assemble, and analyze data, and prepare manuscript for presentation/publication.</p>	
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<p>9.</p>	<p>Climate Change (Natural Resources & the Environment)</p>	<p><u>Extension Forestry Program</u></p> <p>It is estimated that Louisiana possesses over 140,000 private non-industrial forest landowners, and farm-based income from timber harvests constitutes the greatest input to our agriculture sector. Data indicates that even as our forestland becomes more productive, the challenges to educating landowners and management professionals are greater than ever, as ownership patterns become more complex. Our goal is to assist all clientele (both owners and managers) in better managing forest-based resources so that they can be sustained both environmentally and economically through delivery to program participants' technological innovations, technical improvements, and relevant management information that allows and encourages adoption of practices relevant to their forest property to meet short-, medium-, and long-term goals/objectives.</p> <p>Forestry workshops aimed at landowners and natural resource professionals were held in all regions of the state. Topics at these workshops consisted of forest product market trends, tax issues important for forest landowners, state and federal policy changes that affect forestry and wildlife management, invasive species, forest pests, silviculture, wildlife management, and cost share programs helpful for forest landowners. In addition to these annually held broad-topic workshops, events with narrow focus were also held: two prescribed burning workshops, two pesticide recertification training events, one tree pruning workshop, one parish forestry economy landowner meeting, two nature-watching programs, and one Master Logging certification event. There were 327 workshop attendees (owning and/or managing a total of 340,532 acres) at these events. Additional group events consisted of 28</p>	<p>Natural Resources & Environmental Sustainability</p>
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		<p>workshops, three forestry field days, one teacher's tour, four forestry awareness days, two Society of American Forester regional chapter meetings hosted at LSU AgCenter research stations, four multi-week forestry and wildlife exhibits at fairs, and six 4-H and Future Farmers of America events. Media outreach consisted of 7 presentations at professional society conferences, 22 extension articles, 4 web videos, 10 presentations at LSU AgCenter-hosted workshops and field days, 3 presentations at LSU AgCenter webinars, and 2 presentations in national forest management webinars. Other media outreach consisted of a birding program established at the Burden Botanical Gardens in Baton Rouge, posts on the LSU Forestry and Wildlife Facebook page, Timber Tales extension magazine, a Geaux Batty nature walk series for bat identification in Southeast Louisiana, press release of forestry and wildlife extension events produced and distributed by LSU AgCenter Communications, and in newspaper, internet, and television interviews. Direct contacts were made with stakeholders through in-person visits (at landowner locations, specialist offices, and group events), emails, and phone consultations. Approximately 25,000 direct contacts were made by the LSU AgCenter forestry and wildlife extension team in this reporting period.</p> <p>Post-only evaluations of the forestry and wildlife workshops indicated that the average increase in knowledge about forest product market trends, tax issues important for forest landowners, state and federal policy changes that affect forestry and wildlife management, invasive species, forest pests, silviculture, wildlife management, and cost share programs was 47%, with an average of 25% of attendees valuing the information received as being greater than \$1000.</p>	
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<p>10.</p>	<p>Global Food Security and Hunger</p>	<p><u>Triclopyr Herbicide Adoption in Sugarcane</u></p> <p>Sugarcane was grown on 440,000 acres in Louisiana in 2017. Diseases, insects, and weeds threaten yield. Divine nightshade, a new weed pest of sugarcane, was found in a commercial sugarcane field in 2010. Triclopyr provided greater than 95% control of divine nightshade and did not injury sugarcane in subsequent research trials. A Quarantine Section 18 was granted for Trycera® (triclopyr) herbicide from February 10, 2017 to May 31, 2020.</p> <p>Producer meetings and field days were used to educate and encourage use of Trycera herbicide. This influence is monitored periodically in a quantitative manner to provide better educational programs to its stakeholders.</p> <p>A survey was conducted during the summer of 2017 to determine sugarcane producer knowledge and satisfaction of control of divine nightshade with Trycera herbicide. A total of 58 surveys were returned.</p> <table border="1" data-bbox="705 1003 1667 1318"> <thead> <tr> <th>Survey Statements</th> <th>Agree</th> <th>Disagree</th> </tr> </thead> <tbody> <tr> <td>I understand the threat of divine nightshade on sugarcane yield.</td> <td>100%</td> <td>0</td> </tr> <tr> <td>I feel confident that there are control options available for divine nightshade in sugarcane</td> <td>100%</td> <td>0</td> </tr> <tr> <td>I was able to satisfactorily control divine nightshade on my farm by using Trycera herbicide</td> <td>100%</td> <td>0</td> </tr> </tbody> </table> <p>Producers report that Trycera® effectively controlled divine nightshade in sugarcane with 100% agreement. Dr. Al Orgeron, AgCenter weed scientist,</p>	Survey Statements	Agree	Disagree	I understand the threat of divine nightshade on sugarcane yield.	100%	0	I feel confident that there are control options available for divine nightshade in sugarcane	100%	0	I was able to satisfactorily control divine nightshade on my farm by using Trycera herbicide	100%	0	<p>Natural Resources & Environmental Sustainability</p>
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		<p>also reported not receiving any calls or reports in 2017 regarding control failures or adverse effects from the use of Trycera. The economic impact of the Section 18 Emergency Quarantine Exemption in 2017 provided approximately \$3.26 million to the 2017 value of sugarcane in Louisiana.</p> <p>Results of this survey reinforce the notion that the AgCenter plays a major role in influencing the adoption of management decisions for many Louisiana sugarcane producers and processors.</p> <p><u>The Advanced Corn Production Meeting</u></p> <p>Crops forums have been a successful method for delivering educational information to producers; however, the typical focus was on a variety of crops like corn, cotton, soybeans, and sometimes grain sorghum. As interest in general, broad topic workshops has declined, the need for more focused programming has emerged as an avenue for increasing producer interest.</p> <p>The Advanced Corn Production meeting was created to target corn farmers with the latest research from state specialist and other industry collaborators. A hybrid format was used offering both in-person and online, virtual participation options for the meeting. State specialists from both Louisiana and surrounding states, along with agents from the Natural Resource Conservation Service and Farm Service Agency, were recruited to present information specific to corn on Dicamba/Paraquat, early season insect management, accurate planting operations, split application and reference strips for nitrogen management, plant population and row spacing, irrigation, fungicide, on-farm storage, post-harvest management of resistant weeds, and cover crops. Master farmer</p>	
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		<p>credits and certified crop advisor credits were offered. There were 58 participants in the program, 19 in-person and 39 online.</p> <p>Participants reported that the meeting information was useful and that they would use the information to inform management decisions for the corn crop.</p>	
<p>11.</p>	<p>Sustainable Energy: Climate Change and Natural Resource Education</p>	<p>The earth's climate has changed throughout history. Most of these climate changes are attributed to very small variations in Earth's orbit that change the amount of solar energy our planet receives (https://climate.nasa.gov/evidence). Scientists attribute the global warming trend observed since the mid-20th century to the human expansion of the "greenhouse effect"- warming that results when the atmosphere traps heat radiating from Earth toward space. Certain gases in the atmosphere block heat from escaping. Long-lived gases that remain semi-permanently in the atmosphere and do not respond physically or chemically to changes in temperature are described as "forcing" climate change. Gases, such as water vapor, which respond physically or chemically to changes in temperature are seen as "feedbacks." Others gases are, Carbon dioxide (CO₂), Methane, Nitrous oxide (N₂O), and Chlorofluorocarbons (CFCs). Effects that scientists had predicted in the past would result from global climate change are now occurring: loss of sea ice, accelerated sea level rise and longer, more intense heat waves.</p> <p>For Louisianans, the climate crisis is already an everyday reality, especially when it comes to hurricanes, flooding, and sea-level rise. According to one EPA publication (August 2016 EPA 430-F-16-020), in the coming decades, Louisiana will become warmer, and both floods and droughts may become more severe. Unlike most of the nation, Louisiana did not become warmer during the last century. But soils have become drier, annual rainfall has increased, more rain arrives in heavy downpours, and sea level is rising. Our changing climate is likely to increase damages from</p>	<p>Natural Resources & Environmental Sustainability</p>

		<p>floods, reduce crop yields and harm fisheries, increase the number of unpleasantly hot days, and increase the risk of heat stroke and other heat-related illnesses (https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-la.pdf).</p> <p>Three SU Ag Center researchers conducted a project aimed at advancing urban forestry and natural resource education in collaboration with Columbia University and USDA Forest Service. The project was intended also to develop leadership and prepare the next generation for sustainable natural resources management scientists. We organized and hosted three i-Tree Model Application Workshops, one Coastal Ecosystem and Climate Change Student Forum, and one Public Lecture. The workshops included: i-Tree Canopy Model Application Workshop; i-Tree Canopy Model Application Workshop,; i-Tree Design Model Application Workshop. The project provided participant support to two students for their professional development through attending Society of American Foresters National Convention and International Society of Arboriculture Conference. In addition to i-Tree Model, the project incorporated flooding and elevated CO₂ level into students' research training. The uniqueness of the training is that the research tested the combined effects of two stressors, flooding and elevated CO₂, which was not done before. In light of increased hurricane frequency in the Gulf Coast region, research topics such as "Modeling Hurricane Impacts on Live Oak Tree Health and Post Hurricane Land Use Change in Gulfport, Mississippi" and "Wind Damage and Salinity Effects of Hurricanes on Coastal Forests of Louisiana" were also discussed.</p> <ul style="list-style-type: none"> • 97 percent of the participants in the workshops and i-Tree trainings said they gained new knowledge and skill about assessing 	
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		<p>climate change while 95 percent of them indicated that they will definitely utilize knowledge and skills gained.</p> <ul style="list-style-type: none"> • Four more global climate change related research topics were implemented. The four topics were: climate change prediction using GCM model; climate change mitigation by urban forests - evaluating the mitigation potential using i-Tree Eco Model; effects of sea level rise on coastal vegetation, wetlands, and soil - real life scenarios in Louisiana; and wetland & soil carbon flux and its effects on water quality - real life cases in Louisiana. • Under the research guidance of the project Co-PIs, two doctoral students have been applying the current version of i-Tree Eco Model to assess climate change mitigation ability of the urban forests in two communities adjacent to our campus and are in the process of analyzing data and writing the research results. • The project incorporated climate change induced stressors such as elevated CO₂ level in conjunction with flooding into students' research training and extension agents' workshops. • The project has been utilized as a recruitment tool, by providing i-Tree Canopy Model hands-on training to high school students. <p>In collaboration with the Baton Rouge Botanic Garden Foundation and Baton Rouge Main Library, the project staff hosted and delivered a Garden Discoveries Series via a virtual online Zoom meeting platform. Community members were invited and participated in discovering how trees help in mitigating climate change by preventing floods, remove air pollution, store carbon, and produce oxygen.</p>	
12.	Childhood Obesity	<u>Small Changes, Healthy Habits</u>	Obesity, Health & Wellness

		<p>The Center for Disease Control (CDC) places Louisiana as among the most obese states in the Nation, with an obesity rate > 35%. The Louisiana Department of Health reports that 2.9 million Louisiana residents have at least one chronic disease, and that 1.2 million have 2 or more. This creates a huge economic burden, estimated at \$8600 per resident per year; and it is estimated that 16,500 lives could be saved each year through better prevention and treatment efforts. Two key risk factors for chronic disease are unhealthy eating and physical inactivity. Through the advisory process, ways to lose weight and lack of knowledge reading food labels were identified as the health issues families in the community face today. One of the ways identified to target these health issues was teaching grocery store tours.</p> <p>Small Changes, Healthy Habits is a 4-week community nutrition education program that teaches skills and techniques for making modest, healthy, routine changes in both diet and physical activity behaviors. A pilot program was conducted with nine adults completing the program series. Lectures, group discussion, and PowerPoint presentations were used to appeal to the verbal and visual learners. The needs of kinesthetic learners were also met as each lesson incorporated at least one hands-on activity to engage all participants. Each lesson in the “Small Changes, Healthy Habits” series focused on the how-to of each topic and put great emphasis on “learning by doing”. Lesson topics were as follows:</p> <ul style="list-style-type: none"> • Lesson 1: Healthy Habit Change and Physical Activity • Lesson 2: Healthy Kitchen Makeover • Lesson 3: Grocery Store Tour • Lesson 4: Knife Skills and Meal Preparation Tips 	
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		<p>Each participant was asked to set two modest healthy goals for themselves, which they were encouraged to track during the four-week program and beyond.</p> <p>All nine pilot program participants completed a pre-program and post-program survey that was used to help to evaluate changes in food, eating, or physical activity behaviors resulting from program participation. Survey data indicated that among the group of participants:</p> <ul style="list-style-type: none"> • 67% increased confidence in their ability to determine the healthier option when choosing between similar food items at the grocery store. • 67% increased confidence in their ability to prepare healthy meals at home. • 67% increased confidence in their ability to distinguish between “every day” and “occasional” foods. • 67% increased their consumption of fruits, vegetables, or whole grains. • 55% increased their frequency of reading nutrition labels for at least one type of food product. <p>A “Small Changes, Healthy Habits” follow-up was held twelve weeks after the program concluded. The pilot participants met to discuss how they had been maintaining or increasing healthy behaviors initiated during the program. Information gathered from this discussion helped quantify program impacts. At the 3-month time point, participants reported that they were:</p> <ul style="list-style-type: none"> • Reading food labels more diligently • Using the knife skills learned in the program at home • Consuming processed foods less often • Exercising and walking more to achieve a daily step goal • Consuming more fish in place of red meats 	
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<p>13.</p>	<p>Childhood Obesity: Healthy Food Choices</p>	<p>According to the State and Well-Being Rankings (Gallup-Sharecare Well-Being Index2018), Louisiana was number 48 out of the 50 states in health and wellness ranking. Louisiana ranks number 3 in the United States in childhood obesity according to research done by the Robert Wood Johnson Foundation. The Foundation study shows that 20.8% of children 10 through 17 years old are considered to be obese. This percentage has only grown over the last years and is on track to increase further, if positive health changes do not begin to happen.</p> <p>Louisiana 4-H’s Health Living Program aims to address the issue to childhood obesity by specifically serving youth in the 10 to 17-year-old age range and teaching them healthy habits. The Louisiana Food and Fitness Board is comprised of high school students who have been trained in USDA’s MyPlate Standards. Then, these teens involved in the program help educate the communities at the parish levels through food and fitness workshops and day camps. A total of 5,689 youth and 166 teens were reached with at least 6-8 hours of nutrition education. In addition, 1,972 family members were reached. The education was conducted through a series of lessons and one-time events held during school hours, at school gardens, or in after school events and workshops.</p> <p>SU Ag Center research scientists survey results from youth that participated in Healthy Living programs showed that:</p> <ul style="list-style-type: none"> • 87% of participants stated that they learned more about healthy food choices because of the program. • 74% of youth surveyed are now paying attention to water consumption. 	<p>Obesity, Health & Wellness</p>
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		<ul style="list-style-type: none"> • One-third of youth had brought healthy meal and snack ideas back to their families, increasing the community reach of the program. This knowledge will carry into the rest of their adult lives in hopes of creating a healthy habit and lifestyle. <p>Parents, youth and family members used the opportunities provided by them to learn and make healthy food choices. In doing this our citizens are making choices that will benefit them by improving health, reducing doctor visits, and reducing health care costs.</p>	
14.	Food Safety	<p><u>Consumer Food Safety Program for Community and School Food Handlers</u></p> <p>Foodborne illness is a common and costly-yet preventable-public health problem. The Centers for Disease Control and Prevention (CDC) estimates that 1 in 6 Americans get sick and 3,000 die from contaminated foods or beverages each year. The U.S. Department of Agriculture (USDA) estimates that foodborne illnesses cost more than \$15.6 billion each year. Land-grant universities, especially the Cooperative Extension Services, play essential roles in all aspects of food safety by conducting research and delivering science-based educational programs through the extension function.</p> <p>LSU AgCenter Consumer Food Safety program is needs-driven and designed through inputs and feedbacks from public, food industry clients, LSU AgCenter state and field agents, government agencies, as well as regional, national, and international experts. AgCenter provides Louisiana residents, especially the high-risk population (young children, the elderly, pregnant women, and immunocompromised patients) with press articles,</p>	Obesity, Health & Wellness

		<p>factsheets, education videos, eLearning modules. We also contribute to local newspaper articles, radio and television interviews, and websites to reach Family/Consumer Sciences (FCS) agents, educators, and consumers in Louisiana. Approximately 7,600 clients were reached with food safety information; 228 individuals have participated in the community food handler food safety program, and 428 workers have participated in the food safety in school cafeteria program.</p> <p>As a result of participation in the AgCenter Food Safety Culture program, consumers reported knowledge increase ranging from 48% to 81% on topics of foodborne illness reporting, how to use thermometer, and basic food microbiology terms. Community food handlers participating in food safety training reported a 91% increase in knowledge about safe handling practices and an 87% increase in confidence to handle food safely. Cafeteria workers participating in school cafeteria food safety reported a 77% increase in knowledge about safe handling practices and an 68% increase in confidence to handle food safely.</p>	
15.	Youth Development	<p><u>Louisiana 4-H Volunteer Program Prepares Trained and Screened Volunteers to Serve as Caring Adults</u></p> <p>Volunteers play a vital role in the Louisiana 4-H Youth Development program. They develop and deliver educational programs, serve as program leaders and overnight chaperones, maintain advisory positions on 4-H councils and foundation boards, and are advocates for the program. Most importantly, adult volunteers are caring adults who maintain positive relationships with 4-H youth, one of the essential elements of positive youth development. As the number of 4-H agents and administrative staff decreases, the support of trained volunteers is</p>	Youth Development

		<p>critical in continuing to deliver the Louisiana 4-H Youth Development program.</p> <p>Traditionally, the Louisiana 4-H Volunteer Development program has consisted of face-to-face orientations at the parish level and trainings at the parish, regional, and state levels. Participation in the state volunteer conference, the National 4-H Conference, and regional volunteer conferences, is also encouraged. A series of online training courses was created in 2011 to meet the needs of volunteers who cannot consistently attend face-to-face trainings. Eligible volunteers can also get overnight chaperone, authorized driver, and Master Volunteer Program training. These virtual delivery methods are important as a recent volunteer engagement survey demonstrated that most volunteers work during the day (83%), and many have requested more opportunities to receive training in a virtual format. Furthermore, though the online learning system is important for volunteers to have access to essential orientation and training materials, state, parish, and regional face-to-face trainings are offered regularly throughout the year that provide volunteers with opportunities to learn and develop new skills that are critical to the successful delivery of the Louisiana 4-H Youth Development program.</p> <p>During the 2018-2019 year, Louisiana 4-H had 5,879 adults, and 1,851 youth enrolled as volunteers. • Over 372 volunteers attended regional trainings held in the five regions, which is a 24% increase over last year • 30 adult volunteers participated in the 2019 Louisiana 4-H Volunteer Conference and Awards Luncheon at Camp Grant Walker. • Six (6) volunteers and one (1) 4-H agent were honored with awards from the Volunteer Leader Association, and five volunteers achieved three</p>	
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		<p>different levels of Master Volunteer, including the first Louisiana 4-H Gold Level Master Volunteer. • Ten (10) 4-H volunteers were named to the Louisiana 4-H Hall of Fame, two volunteers were nominated for the National 4-H Council Salute to Excellence Award, one volunteer was named to the National 4-H Hall of Fame Class of 2018, and one volunteer was named to the National 4-H Hall of Fame for 2019. • 735 adult volunteers were trained as overnight chaperones, and 589 youth were trained as volunteer camp counselors. • A total of 200 adult volunteers donated 19,200 hours of their time to 4-H camp, which is a 13.6% increase over last year’s numbers, for a total economic value of \$507,456</p> <p>• Together the adult and youth volunteers at 4-H Camp enabled 3,744 Louisiana 4-H youth ages 9-11 to experience 4-H Summer Camp, the definitive Louisiana 4-H positive youth development program.</p> <p><u>Louisiana 4-H Volunteer Program Assessing Volunteer Engagement and Collaborative Partnerships</u></p> <p>Volunteers play a vital role in the Louisiana 4-H Youth Development program. They develop and deliver educational programs, serve as program leaders and overnight chaperones, maintain advisory positions on 4-H councils and foundation boards, and are advocates for the program. Furthermore, strong, mutually beneficial, and collaborative volunteer and community partnerships enhance curriculum, teaching, and learning, and help our 4-H program prepare educated, and engaged youth, as well as allow our program to address critical societal issues, and contribute to the public good.</p> <p>Community engagement describes a collaboration between institutions of higher education and their larger communities, for the mutually beneficial</p>	
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		<p>exchange of knowledge and resources in the context of partnership and reciprocity. In the last Carnegie Community Engagement cycle, there has been a strong emphasis on creating more collaborative, and mutually beneficial partnerships within US Extension programs. In response to the charges put forth by the Carnegie Foundation, Louisiana 4-H adapted the Carnegie community engagement partnership framework to develop a volunteer engagement survey that measured mutuality, reciprocity, and collaboration within volunteer-program partnerships, as well as capture learning, needs for training, educational resources, and other support that volunteers needed to do their jobs effectively.</p> <p>Results of the volunteer survey (n=220) demonstrated that volunteers were serving an average of 11.8 hours per month for an estimated amount of 141.6 per year, and 832,324 volunteer hours annually (estimated economic impact of \$21,166,024 according to the Independent Sector). Moreover, the top five leadership skills that volunteers said they gain from participating in their volunteer experience are coaching and mentoring, teamwork, time management, critical thinking, and creativity/innovation. Furthermore, as a result of their volunteer experience, volunteers have a better understanding of leadership development (95%), social responsibility (96%), diversity and inclusion (93%), their community (94%), their purpose (90%), and their passion (93%). Additionally, volunteers stated that serving with 4-H has had a positive impact on them (97%). When asked questions specific to collaborative partnerships, volunteers stated that: The Louisiana 4-H personnel take specific actions to ensure mutuality (shared interest) and reciprocity (a mutually beneficial exchange between agency and volunteers) within program-volunteer partnerships (89%), the 4-H</p>	
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		<p>program collects and shares feedback (89%), the 4-H program recognizes volunteers as collaborative partners (89%), volunteers are asked about their perception of the program's impact on the community (81%), the volunteer's voice is heard, and they are involved in relevant conversations that impact the 4-H program and the community (85%), and the 4-H program has had a positive impact on the community (97%). Currently, the survey data is still being analyzed for potential action steps based on the results. The goal is to use the data to produce a Volunteer Engagement Report as well as future recruitment materials communicating the benefits of volunteering with Louisiana 4-H.</p> <p><u>Every Moment Counts "Pasture to Plate"</u></p> <p>Most American citizens are at least four generations removed from an agriculture-based lifestyle, along with their food and fiber resources. When surveyed, 72% of consumers knew very little about farming and ranching. Yet, 70% of those surveyed consumers say purchase decisions are affected by how food is grown and raised (USFRA, 2011). Even with such staggering statistics about agriculture, the livestock and meat industries remain a cornerstone in Louisiana's economy and culture. In the state of Louisiana, the meat industry provides a total economic impact of approximately \$11.4 billion (NAMI, 2016).</p> <p>Exposure to the educational and career aspects of the meat culture found in Louisiana teaches about food and fiber systems while addressing the disconnect between consumers and their food. To encourage involvement in science, engineering, and technology LOST (Louisiana Outdoor Science and Technology) camp was developed. A dedicated animal science (ANSC)</p>	
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		<p>track at the SET camp allowed for a diverse audience to connect ANSC to traditional SET concepts for the first time in the camps 10-year history. Youth participated in ANSC lectures, hands-on learning, and team-teaching activities. The ANSC track covered topics of general animal science with species breed stations including a competitive breed ID activity to engage learning and listening skills coupled with teamwork and sportsmanship. Animal nutrition stations with a ration building activity requiring critical thinking, and mathematics. An animal health rotation developed with read-learn-teach techniques on topics of proper injection methods and procedures, the importance of identification systems, and the use of growth promotants. The track concluded with a meat science session connecting the livestock “pasture” to the meat science “plate” while introducing food science and research and development, through a sausage making activity to evoke creativity, and skills in analyzing food product development.</p> <p>As a result of the ANSC track at LOST camp 75 LOST camp attendees completed the ANSC track. 98% of participating campers felt more confident about their understanding of animal science and the livestock and meat production industries. 96% of campers learned what meat science was and how it was important to them. 95% of campers said they were MORE confident of how their food is raised, where it comes from and is made.</p>	
<p>16.</p>	<p>Youth Development: Fast Track Youth Gardening</p>	<p>On any given day (2017), nearly 60,000 youth under age 18 are incarcerated in juvenile jails and prisons in the United States (ACLU: https://www.aclu.org/issues/juvenile-justice/youth-incarceration/americas-addiction-juvenile-incarceration-state-state). Most are held in restrictive, correctional-style facilities, and thousands are held without even having had a trial</p>	<p>Youth Development</p>

		<p>(https://www.prisonpolicy.org/reports/youth2019.html). Louisiana once had 151-225 per 100,000 Youth Incarceration Rate and the Ratio of Rates of Youth of Color to White Youth in Custody (2011) was 4.1 to 1 (https://www.aclu.org/issues/juvenile-justice/youth-incarceration/americas-addiction-juvenile-incarceration-state-state). The cost of keeping each youth in detention per day could be as high as \$500 (\$182,500 per year). According to Casey Group 2003, approximately 77% of the youth incarcerated in Louisiana are for non-violent crimes. The Louisiana Children’s Code places a high priority on keeping delinquent youth in their homes, when possible. According to the Casey Group 2003, when youth are incarcerated, it should be viewed as a failure for children to learn appropriate social behavior due to a lack of parenting. Southern University Agricultural Research and Extension Center (SUAREC) provides training in the field of agriculture to troubled youth in some correctional centers for youth.</p> <p>Youth were able to maintain and expand gardens at Baton Rouge Detention center, Bridge City Center for Youth and Thrive Academy. Students at Baton Rouge Detention Center maintained three (4x8) raised beds and an in-ground garden (20x50ft). Students had hands on lessons as well as classroom lessons when it was raining or foggy. Students planted hibiscus roselle, tomatoes, bell peppers, mint, artichoke, lemongrass, broccoli, cauliflower, mustard greens, collard greens and luffa. Additionally, youth learned the importance of plant propagation, planting seeds correctly, plant identification, tilling and basic garden maintenance, and the benefits of gardening for mental and physical health. 89 (unduplicated) youth have participated in the garden this year in small classes of 5-10 each session. Classes are held weekly. Behavior is the basis of who works in the garden and there is a fast turn-around with youth because the facility is a holding facility until recently</p>	
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		<p>arrested students go to trial to be released or sentenced to a longer term facility. COVID - 19 created a halt in face to face meetings and further preparation for the future of this program. During the period, youth were able to maintain and expand gardens at the three correctional sites. Behavior is the basis of who works in the garden and there is a fast turn-around with youth because the facility is a holding facility until recently arrested students go to trial to be released or sentenced to a longer term facility. The project staff usually meets with the director of each facility to review land use for the project, equipment and materials, and discuss overall program details for the year. In addition, youth learned the importance of plant propagation, planting seeds correctly, plant identification, tilling and basic garden maintenance, and the benefits of gardening for promoting good health.</p> <p>During the duration of COVID– 19 pandemic (stay at home orders), Thrive 'garden club' has been able to meet via Zoom every Monday at 1:30 to discuss how the students are coping, if they've had any contact with gardening during this time (which surprisingly most of them have) and seed kits have been distributed to the garden club students so they can germinate their own vegetable seeds from their homes.</p> <ul style="list-style-type: none"> • As a result of the youth attending classes 97 percent of participants developed awareness and increased knowledge in leadership development, basic horticultural knowledge, and nutrition. We received positive feedback from the students when asked to taste what was harvested. • Eleven (11) participants received certificates of completion this year to utilize in court decision and for job applications. • With the leadership of the new instructor, students have also extended the garden to be include additional 10' x 10' beds. 	
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		<ul style="list-style-type: none"> • 95% of participants gained knowledge and skills in harvesting mustard greens, collard greens, green onions, strawberries, mint, basil, eggplant, peppers (sweet and hot) and other herbs. Youth also engaged in lessons on how to plant seed, and transplants appropriately, nutrition, entrepreneurship, and careers in agriculture. • The youth participants used knowledge gained in landscaping the front of their dorm area with ornamental and edible landscape and also have (5) citrus trees on the school campus. Some youth who reside on campus were able to harvest, cook and eat a majority of the produce that came out of the garden with the assistance of their Residential Advisors. 	
<p>17.</p>	<p>Youth Development: Eradicating Food Deserts</p>	<p>The United States Department of Agriculture (USDA) define a food desert as an area that has either a poverty rate greater than or equal to 20 percent or a median family income not exceeding 80 percent of the median family income in urban areas, or 80 percent of the statewide median family income in nonurban areas. Food deserts are urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food (USDA & Service, Creating Access to Healthy, Affordable Food). Low access to a healthy food retail outlet is defined as more than 1 mile from a supermarket or large grocery store in urban areas and as more than 10 miles from a supermarket or large grocery store in rural areas. Driven by a dramatic rise in unemployment, more than 1 in 3 Louisiana residents now lives in food insecure communities due to COVID-19. (https://urbanfootprint.com) Louisiana ranks third in the nation for risk of food insecurity. Without access to healthful foods, people living in food deserts may be at higher risk of diet-related conditions, such as obesity, diabetes, and cardiovascular disease (https://www.medicalnewstoday.com). Across Louisiana, 1.3 million</p>	<p>Youth Development</p>

		<p>residents (29 percent of Louisiana’s total population) live in communities designated by the USDA as having low access to grocery stores. The problem affects every civil parish in the state, with 83% of parishes (counties) containing communities with a severe enough concentration of low-access residents to merit the designation of “food desert” by the USDA. (https://www.togetherla.org)</p> <p>We received funding for a project “The Eradicating Food Deserts in Neighborhoods through the Development of School Gardens” and utilized the project for seeking to successfully educate local communities, citizens, and students on the importance of growing their own produce. The project utilized a holistic, hands-on approach to gardening in conjunction with the newly developed, self-produced SUAREC Community Gardening Curriculum.</p> <p>We conducted classroom instruction (until the onset of the COVID-19 pandemic) of the 14-lesson SU Ag Center curriculum, additional 4-H Youth Development Curriculums, and hands-on demonstrations. Through this unique program, Extension Agents and Associates were to certify students, ages 13-17 as Youth Master.</p> <p>Through this grant opportunity, our team was able to reach out to surrounding schools to encourage them to take part in school gardening. Partnering with the Louisiana Public Broadcasting (LPB), we created content for circulation on social media platforms, helping to educate the community on sustainable gardening practices. Some of the recording sessions highlight different areas of the community such as: nutrition and accessibility, proper food selection and preparation, etc.</p> <p>Cleggs Nursery, a local business, provided assistance through opportunity to provide plant materials. Local schools also collaborated by providing grounds for their students to establish and maintain vegetable gardens.</p>	
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OPTIONAL

2020 Annual Report of Accomplishments and Results (AREERA)

Youth Development Expenditures (dollars)	
State and/or Institution:	FY 2020 Expenditures (\$)
1862 Smith-Lever	Previously submitted
1890 Extension	Previously submitted