

**ANNUAL REPORT OF ACCOMPLISHMENTS AND RESULTS**

**For**

**THE SOUTHERN UNIVERSITY AGRICULTURAL RESEARCH AND  
EXTENSION CENTER**



**Presented to**

**THE UNITED STATES DEPARTMENT OF AGRICULTURE/  
COOPERATIVE STATE RESEARCH, EDUCATION, AND  
EXTENSION SERVICE**

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## **INTRODUCTION**

Southern University Agricultural Research and Extension Center (SUAREC), the fifth campus of the Southern University and Agricultural & Mechanical College System has the charge of increasing the impact of the 1890 Land-Grant Programs on the citizens of Louisiana. SUAREC combines both research and cooperative extension programs into a unified system at the campus level. The Center assumes administrative responsibilities for the federal research and extension funds as stipulated under sections 1444 and 1445 of the National Agriculture Research, Extension and Teaching Policy Act (NARETPA) of 1977. Sections 202 and 225 of the Agricultural Research, Extension and Education Reform Act of 1998 (AREERA) which amended the Smith-Lever Act, the Hatch Act, and the NARETPA of 1977 requires the submission of the Plan of Work (POW) by institutions in order to continue to receive formula funds for its research and extension programs.

In compliance with the federal mandate, SUAREC submits the Plan of Work (POW) and the Annual Report of Accomplishments and Results as required. Effective FY 2003 and FY 2004, both research and extension Plans of Work and the Annual Report of Accomplishments and Results respectively have been submitted jointly, i.e., as a combination of both research and extension programs. This document reports accomplishments and results for Fiscal Year 2006 (October 1, 2005 to September 30, 2006) consistent with the approved POW.

Additionally, SUAREC complies with the mandates from the State of Louisiana and the Southern University and Agricultural & Mechanical College System by submitting 5-year strategic plans with follow up quarterly reports.

## **PLANNED PROGRAMS**

In order to address the five national goals for agriculture, the Southern University Agricultural Research and Extension Center places emphasis on the following broad areas:

- 1. Sustainable Agricultural Systems
- 2. Urban Forestry and Natural Resource Management
- 3. Nutrition and Health
- 4. Family and Human Development
- 5. Youth Development
- 6. Economics and Community Development

## **OVERVIEW**

The mission of SUAREC is to conduct basic and applied research, and disseminate information to the citizens of Louisiana in a manner that is useful in addressing their scientific, technological, social, economic and cultural needs. The goal is to assist diverse audiences, who have limited social and economic resources, improve their access to positive opportunities through research and outreach education. SUAREC aims to help small-scale and limited resource farmers and ranchers develop and/or maintain viable farming operations that are in harmony with the environment, help communities

build capacity to enhance the growth and development of the business and industrial sectors, and improve the quality of life for families and youth throughout the State. To ensure that clientele needs are addressed effectively, the research and extension programs target the same clients. Research projects are designed with inputs from stakeholders and the findings are specially packaged and disseminated by the extension agents.

As a result of the devastation of Hurricanes Katrina and Rita in the later part of FY 2005, SUAREC programs reached out to many evacuees in shelters throughout the state. Currently, these programs continue to serve many evacuees who are still being housed in temporary trailers and others who have and/or are trying to resettle both in the greater New Orleans area and also in various parts of Louisiana.

## **STAKEHOLDER INPUT PROCESS**

Soliciting stakeholder input is a continuous process which is embedded in the Southern University Agricultural Research and Extension Center's entire program development process. Stakeholder inputs are used to establish priorities, goals and objectives consistent with state, regional and national issues based on the land-grant philosophy. The Parish Advisory Council is organized at the grassroots level by each extension program to involve clients, community leaders, state and local government officials, and other stakeholders in the process of identifying community needs and/or resources, programs and projects to address them. Parish advisory council meetings are conducted at least once annually and important discussions are documented and utilized by the extension agents in developing the parish plan of work. One indication from parish surveys is that all SUAREC extension staff have functioning parish advisory councils. The Louisiana Cooperative Extension Service (LCES), annual parish review also indicates that all SUAREC extension staff do seek and obtain inputs from parish advisory councils, focus groups, public forums, clients and community leaders when planning their work.

Extension Agents use information from focus groups, public forums, community leaders, and the client needs assessment to develop their plan of work. Agents' plans of work, needs assessment, and information from the forums are submitted to the specialists at the state office. The state specialists meet monthly with the Vice Chancellor for Extension to report on progress of work (and problems) and to review and/or revise where necessary. Additionally, joint research-extension exchange meetings are held periodically to identify critical areas that warrant research by the Center to better serve the needs of clients. Furthermore, the Chancellor's Advisory Council serves to advise the Chancellor on ways that would ensure greater stakeholder input in identifying and planning meaningful, effective and efficient research, education and outreach programs to benefit the citizenry of the state of Louisiana.

In summary, the Center's research and extension programs, the federal plan of work and the state strategic plan are developed based on the information received from the grassroots such as, Parish Advisory Councils, parish plan of work, the Louisiana Cooperative Extension Service, parish review team, needs assessment, evaluation studies,

Strategic Planning Meeting, Joint Research-Extension Exchange Meetings, Chancellor's Advisory Council, Program Areas Advisory Councils, Federal and State Agencies, Commodity Organizations, and Land Grant Institutions.

Data collected from these sources by the Office of Planning and Evaluation are made available to the Research and Extension administrators who in turn utilize them to plan and prioritize their program/projects to address needs/problems of Louisiana citizens.

The following are some of the sources of the stakeholders input:

**Strategic Planning:** The Southern University Agricultural Research and Extension Center holds periodic strategic planning retreats to provide a forum for sharing knowledge and information between research and extension faculty and staff and for creating a model designed to integrate both entities. The main outcome is the exchange of information to ensure that research and extension programs in the Center as designed are relevant to the needs of the people of Louisiana and implemented to meet and address the needs of citizens. Research and extension faculty and staff from each of the six program areas of SUAREC met January 8-10, 2007 to discuss and plan strategies to efficiently and effectively provide services to clientele.

**Joint Research-Extension Exchange Meetings:** As a follow up to the strategic planning conference, joint research-extension exchange meetings were held to identify critical areas which warrant research by the Center to better serve the needs of clients. Several joint meetings were held and the information gathered was incorporated into the development of the FY 2007-2012 Plan of Work.

**Plan of Work Conference:** The primary focus of the 2005 SUAREC Program Development Conference was to bring together faculty and staff of the Center to create a comprehensive 5-year Plan of Work (POW) that meets and addresses the needs of the clientele/citizens of Louisiana. The major goal was to expose faculty and staff to an overall awareness and understanding of the problems/situations facing our clientele and the planned research and extension programs/projects to address them. And in the joint research and extension fora, critical inputs were sought and shared between extension agents, state specialists, and research faculty and staff.

**Parish Advisory Councils:** Organized at the grassroots, are Parish Advisory Councils for each extension program area. These Councils involve clients, community leaders, state and local government officials, and other stakeholders in identifying community needs and/or resources, programs and projects to address them. Parish advisory council meetings are conducted regularly, and important discussions are documented and utilized in the joint research-extension exchange meetings. A survey of extension staff shows that 100 percent of the staff have functioning parish advisory councils in their areas. Extension staff sought inputs from parish advisory councils, focus groups, public forums, clients and/or community leaders when planning their work.

Additionally, public forums involving community leaders are usually conducted during the Annual Faith-Based and Community Economic Development Conference. In FY 2006, the conferences took place in Baton Rouge, Louisiana and forums were conducted to seek inputs on best ways to institute programs that will improve quality of life for the people of Louisiana through research and education.

**Survey of Clients:** The Office of Planning and Evaluation of SUAREC conducted surveys of clients to seek their inputs in assessing programs already in place, gather data on areas of need, and evaluate the impacts of existing programs. These findings are vital to the conceptualization and implementation of programs that will ensure improved quality of life.

**Survey of Extension Staff:** The Office of Planning and Evaluation also surveyed the extension staff to assess progress of previous year's initiatives, identify new and emerging issues that SUAREC may consider, and to seek their inputs with regards to research, education and outreach programs necessary to improving the quality of life for citizens. Findings from the surveys were incorporated into the FY 2007-2011 Plan of Work.

**Chancellor's Advisory Council:** The Chancellor's Advisory Council has representatives from various stakeholders' interests such as Clients, Clientele groups, Federal and State Agencies, Commodity Organizations, Land Grant Institutions, and other Agriculture, Family and Consumer Sciences related groups. The Council advises the Chancellor on ways that would ensure greater stakeholder input in identifying and planning meaningful, effective and efficient research, education and outreach programs to benefit the citizenry of the state of Louisiana.

**Program Areas Advisory Councils:** These Councils (currently being constituted) are expected to ensure greater subject matter stakeholder input in identifying and planning meaningful, effective and efficient research, education and outreach programs to benefit the citizenry of the state of Louisiana.

## **PROGRAM REVIEW:**

**Merit Review by CSREES:** A request was submitted to the United States Department of Agriculture/Cooperative State Research, Education, and Extension Service (USDA/CSREES) in Washington, D.C. for a comprehensive review of the research program in the fall of 2004. A review team headed by a senior staff of the CSREES reviewed the Center's research projects for relevancy of the research to local and national needs, program performance (output, outcomes, and impacts), adequacy of resources to meet program objectives, and the interrelationship between research and extension. Findings provided by the team indicate that SUAREC's research projects are accomplishing targeted objectives. These findings will be utilized by SUAREC for program direction and allocation of resources. Additionally, SUAREC continues to



conduct internal evaluation of all research projects to ensure that they are meeting the needs of its clients.

**Peer Review:** All CSREES funded programs/projects and others seeking funding are subjected to a thorough scientific and educational peer review process. A Proposal Review and Evaluation Committee (PREC) comprising of faculty and staff from SUAREC and the greater university community is functioning effectively. It operates as a standing committee to review proposals consistent with standard agency guidelines and other established scientific and educational criteria. Proposals usually undergo strict review, scrutiny and endorsement by discipline peers, program heads, and a select review committee. Additionally, each proposal must show clear evidence of stakeholder input prior to approval by the Vice Chancellor for Research and/or Vice Chancellor for Extension.

## **FIVE NATIONAL GOALS FOR AGRICULTURE**

To address the five national goals for agriculture, SUAREC planned and executed its research and extension programs as follows:

### **National Goal 1: An agricultural production system that is highly competitive in the global economy.**

SUAREC's research and extension programs in sustainable agriculture, human nutrition, diet, health, family and consumer sciences worked collaboratively in addressing this goal. The goal was accomplished through the following projects/programs:

#### **RESEARCH PROJECTS:**

1. Effects of Mixed Species Grazing Systems and Forage Quality on the Production, Growth and Carcass of Cattle and Goats
2. Pasture Rearing of Poultry and Rabbits
3. Evaluation of Methods and Usages for Processed Aquatic Waste Meals
4. Effects of Low-Cost High Tunnel and Formulated Media on Production of Selected Horticultural Crops for Niche Market

### **1. Effects of Mixed Species Grazing Systems and Forage Quality on the Production, Growth and Carcass of Cattle and Goats**

In 2005, beef cattle production ranked fourth as a major agricultural enterprise in Louisiana in terms of the value of products sold. Cattle producers suffered substantial losses as a result of hurricanes Katrina and Rita. The number of cattle decreased by 7 percent compared to the 2004 figures (Louisiana Summary, Agriculture and Natural

Resources, 2005). Gross farm income from beef cattle was \$366.2 million (9 percent of the total cash receipts from the sale of farm products). The most popular form of beef cattle production in Louisiana is the cow-calf system in which producers maintain and breed a herd of brood cows and sell the calves as weanlings.

Goat meat production is increasing in popularity in the Southeastern United States. Goat meat production is a good prospect for diversification and enhancement of small farmers' income. The potential for goat production to substitute or complement traditional livestock rests on three premises. 1) Goats can be produced with relatively little capital and labor, the meat is rich in protein and U.S. consumers are becoming more heterogeneous and many are willing to try new and exotic products. 2) Cattle are grazers and will not consume all the grass in a given area. 3) Goats are browsers and are more selective, thus they have a tendency to nibble on leaves, twigs, and young shoots of trees or shrubs. Therefore, the two species together should consume everything for efficient utilization of available forages.

The objectives of this project are to: 1) evaluate the reproduction, growth and carcass traits of cattle and goats under mixed species grazing at a constant stocking rate; 2) evaluate parasitic loads in cattle and goats, and determine lateral benefits, if any, of mixed grazing; 3) determine the effects of mixed species and grazing practices on the yield and quality of forage crops; 4) evaluate the effect of soil compaction due to mixed species grazing on the physical properties of soil; 5) establish field demonstration plots of forage cultivars for outreach activities; 6) determine the economic feasibility of cattle and goat production under mixed species grazing.

Body weights, body condition scores, FAMACHA scores, fecal and blood samples have been taken on 80 does and 100-150 kids since the initiation of the experiment in October, 2005. Similar measurements, except for FAMACHA and condition scores, are taken on cows and calves on the experiment. Forage samples have been taken before and after grazing during each rotation (every 7 days). In the laboratory, forage samples are analyzed for (DM), crude protein (CP), neutral detergent fiber (NDF), acid detergent fiber (ADF), calcium (Ca), phosphorous (P), and ash. From these measurements, Total Digestible Nutrients (TDN), Digestible Energy (DE), Digestible Dry Matter (DDM), Net Energy (NE), and Dry Matter Intake (DMI) will be determined. Soil parameters, including soil bulk density, volumetric water content, penetrometer reading, infiltration rate, percent soil pore space, and soil permeability have been collected every quarter. This is the first year of the current project; data collected are being organized for statistical analysis.

**Key Theme:** The central theme of this project is to raise forage-based livestock throughout the year with minimal supplementation.

**Output:** The end product of this project is the efficient utilization of pastures for livestock production. Naturally, cattle are grazers and tend to consume all the grass they could grasp by their tongue, leaving weeds and woody plants behind. On the other hand, goats are browsers and are more selective.

Presentations on mixed-species grazing benefits were given to producers in St. Landry Parish, Louisiana which has the largest concentration of goat and cattle farmers. Other dissemination activities were conducted by the research associate for the project in collaboration with extension agents and staff of the project as follows: (1) Basics of Goat Production, June 2006, Lawtell, Louisiana, 30 participants. (2) Goat Production in Louisiana, July 2006, Opelousas, Louisiana, Southwest Center for Rural Initiatives (SCRI), 70 participants. (3) Goat Numbers in Louisiana, October 2006, Opelousas, Louisiana, SCRI, 50 participants.

Other Dissemination Related Activities:

(1) 2<sup>nd</sup> Annual Field Day, April 2006, Southern University Ag Center, Baton Rouge, 40 participants. (2) FAMACHA Training, June 10, 2006, Lawtell, LA, 15 producers certified. (3) Kid Camp, June 25-30, SU Ag Center Campus, Baton Rouge, Louisiana, 22 youth in attendance.

### **Publications/Presentations**

This is the first year for the current project, no publication is available. However, the following presentations were made from previous project.

Walsh, T., Sebhatu Gebrelul “IFAFS Update”. May 2005, Atlanta, GA.

Gebrelul, S. and T. Walsh. “Empowering Small and Minority Farmers in the Meat Goat Industry In Louisiana: The Initiative for Future Agriculture and Food Systems”. P156. IN: The 14th Biennial Association of Research Directors' Symposium, April 1-5 2006, Atlanta, Georgia.

Gebrelul, S., O. Phelps, C. Chisley, W. Rawls, C. Rogers, B. Udoh, L. Parker, and S. Palle. “Advances in Meat Cuts Identification For Undergraduate Students”. p87. IN: The 14th Biennial Association of Research Directors' Symposium, April 1-5 2006, Atlanta, Georgia.

Gebrelul, S., A. Harris, Y. Ghebreyessus, V. Bachireddy, and G. Simon. “The Performance of Brangus Cows Under Mixed-Species Grazing Systems: 2004 Observations”. p303. IN: The 14th Biennial Association of Research Directors' Symposium, April 1-5 2006, Atlanta, Georgia.

Gebrelul, S., T. Walsh, Y. Ghebreyessus, V. Bachireddy, and Z. Augustine. “The Performance of Spanish Goats Under Mixed-Species Grazing Systems: 2004 Observations”. p303. IN: The 14th Biennial Association of Research Directors' Symposium, April 1-5 2006, Atlanta, Georgia.

**Outcome:** Presentations on mixed grazing benefits have been made to producers in St. Landry Parish, Louisiana. As a result, producers are coming together through the help of the project staff to form a cooperative. This cooperative will be part of an eight-state regional cooperative known as the Southeast Goat Cooperative (SOGOCO). The Cooperative held its first meeting in 2006 at the Opelousas North City Park as the group collaborated with the City of Opelousas who provided space. At a FAMACHA Training, June 10, 2006, Lawtell, Louisiana, 15 producers were certified. A 3-day Kid Camp for 22

youth ages 11 -14 was conducted, majority of the youth in attendance said they will get involved in raising livestock – and for some of them, they plan to exhibit at future Annual Livestock Shows organized by the SU Ag Center.

**Impact:** In FY 2005, herds belonging to five participants averaged about 150 percent kidding rate or a market value of approximately \$4,000 each. The five farmers currently participating in this project are serving as peer mentors, model farmers and advisors to other limited resource clients. The site of the mixed-species project is serving as a laboratory for training/workshop in production, management, nutrition, and health of goats. As a result of their participation in the workshops/training, more farmers especially the Heifer Project International (HPI) participants have indicated strong interest in adding goats to existing cattle farms. Also, 75 farmers who participated in demonstrations to detect parasites using the FAMACHA eye color chart reported saving up to \$300 each (a total of \$22,500) annually in animal care costs.

The project also provided expertise to develop educational materials for Future Farmers of America (FFA) to enhance youth experiences. A CD-ROM suited for training youths on proper slaughtering techniques, meat grading and identification has been developed and used to train 150 vocational agricultural educators

**Scope of Impact:** Information generated from this project will be disseminated widely by collaborators such as Louisiana State University Agricultural Center and the Louisiana Department of Agriculture and Forestry. Citizens of Louisiana, Southeastern United States, and other areas where multiple species grazing may be practiced could benefit from the study.

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana

## 2. Pasture Rearing of Poultry and Rabbits

Interest in pastured poultry and pastured rabbit is growing with numerous successful pastured poultry producers across the U.S. Many claims are made about the effects of pasturing on the flavor, texture and nutritional value of the meat. Claims regarding the health benefits in terms of the omega 3 and omega 6 fatty acid ratios and the CLA contents of meat from pastured poultry and rabbits have not been quantified through scientific data. Most of the work on fatty acid ratios has been carried out with ruminants. Because the rabbit is a non-ruminant herbivore and the chicken a omnivore, there may be important differences in the effects of pasturing on the fatty acid contents of the meats from these species. Studies with controlled experimental parameters are needed so that the producers can accurately inform their customers.

The goal of this research program is to provide sound scientific information for pastured poultry and rabbit producers and to recruit, educate and provide information to such producers thus increasing the availability of the products in Louisiana and increasing the farmers' income. Specific objectives include comparing the method of housing on productivity of poultry and rabbits; comparing method of housing on egg and meat

quality including fatty acid profiles and consumer acceptance studies; and to provide a clearinghouse and connection among pastured poultry and rabbit producers in Louisiana. This project is a part of the Southern University Agricultural Research and Extension Center strategic plan goal to strengthen the productivity, profitability and competitiveness of Louisiana's agriculture, forestry, and fisheries while enhancing the environment and wise use of the natural resources. This fits in with the USDA strategic goal for 2002-2007 to develop an agricultural system that is highly competitive in the global economy.

**Key Theme:** Value added animal products

**Output:** This is the second year of the project, however, the laboratory assistant employed to carry out the chemical analyses recently resigned thus slowing our progress with the analyses. The position has now been filled. The remaining 30 chicken samples from trial number 1 (conducted in FY 2005) were de-boned, homogenized and stored in a freezer for further analysis. Dark leg meat and white breast meat were analyzed separately. Proximate analysis (fat, ash, protein and moisture) was performed on the homogenized samples. Proximate analysis has also been carried out on egg samples (yolk and white) from the three housing treatments. Analysis of these data is ongoing. The consumer acceptance trials with the broiler meat were concluded in FY 2005 and analysis of the data is ongoing. Presentations about pastured poultry production were made to various farmer groups and to the Louisiana Gulf Coast Institute of Food Technology. Several farms have been visited and one technical staff from the project and a pastured poultry producer attended a conference on pastured poultry in Mississippi to make a presentation. A pastured rabbit trial was conducted that indicated needed refinement of our methods. Unfortunately, breeding problems that arose last year have continued, so no further trials have been carried out.

Based on previous research the following papers were published:

**Publications/Presentations:**

The publications/presentations from current and previous projects are as follows:

McNitt, J.I., J. Gager, F. Malekian, A. Bond, H. Mellieon, Jr., L. Parker, and K. W. McMillin. 2006. Pasture finishing of rabbits using the Morant-style hutch. Presented at the 3<sup>rd</sup> Rabbit Congress of the Americas held in Maringa, Brazil August 21-23, 2006 and published on the CD containing the Proceedings of the Congress.

McNitt, J. I. and Parker, L. 2006. What is Pastured Poultry? SUAREC Publication 196-00. 4 pp.

McNitt, J. I. and Parker, L. 2006. Brooding Broiler Chicks for Pasture. SUAREC Publication 196-01. 4 pp.

McNitt, J. I. and Parker, L. 2006. Rearing Broilers on Pasture. SUAREC Publication 196-02. 4 pp.

McNitt, J. I. and Parker, L. 2006. Marketing Pastured Poultry Products. SUAREC Publication 196-03. 4 pp.

Forrester-Anderson, I.T, J. McNitt, R. Way and M. Way. 2006. Fatty acid content of pasture-reared fryer rabbit meat. **Journal of Food Composition and Analysis**, 19:715-719.

McNitt, J. I. 2006. Policies and strategies for the development of rabbit production in American countries – United States. Presented at the 3<sup>rd</sup> Rabbit Congress of the Americas held in Maringa, Brazil August 21-23, 2006 and published on the CD containing the Proceedings of the Congress.

McNitt, J. I. and J. Swanson. 2005. Animal welfare issues for commercial rabbit producers. In: “Information Resources on the Care and Welfare of Rabbits” AWIC Resources Series, No. 31, pp. xvii-xxx.

From previous project:

Z. Negatu, McNitt, J.I., and K. McMillin. 2006. Determination of small bone fragments in mechanically separated rabbit meat. **Journal of Muscle Foods**, 17:185-197.

**Outcome:** Several farmers have continued with pastured poultry production and are garnering substantial income from the practice. Several new farmers have also been recruited. One farmer is producing Halal chicken for the Muslim community and is currently constructing a small processing plant for his home processing activities. Most participants in the training sessions were interested in starting pastured poultry production or expanding the numbers they were already doing. All participants said they found the training sessions useful and that the sessions increased their knowledge of pastured poultry production. The “on-farm” processing sessions were especially appreciated because that is the hardest part of the paradigm. We have a set of small processing equipment we loan to the farmers while they are getting started. This allows them to try the method to determine if they want to continue. If they do continue, they can continue to borrow our equipment or, if they wish to expand their operations, they can purchase a set of their own. Four extension educational publications on pasture poultry production and marketing were prepared and distributed to producers.

**Impacts:** Three new producers have started rearing pastured poultry. They were all successful with their first batches in that they successfully produced and processed the birds and used them for home consumption and sold enough to make a profit. All three intend to continue production but have been slowed because of hurricanes Katrina and Rita which negatively impacted all of our producers. One farmer is producing Halal chickens for the Muslim community. He indicated that pastured poultry production has increased his income by about \$5,000 per year and he is constructing a small processing plant for butchering his chickens and working with other farmers in the area to increase their production.

**Scope of Impact:** At the present time, the beneficiaries are all residents of Louisiana. Once information regarding the chemical composition and sensory analyses become available and are published, the impact will be nationwide.

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana

### **3. Evaluation of Methods and Usages for Processed Aquatic Waste Meals**

The overall goal of the project is to find ways to utilize aquatic waste (AW) in animal and plant systems. Clean air, water, and land are priceless. Proper disposal of AW derived from crawfish, crab, and shrimp is a growing environmental problem in Louisiana and other states with aquaculture industries. Nationwide, there is an increasing enforcement of state and federal environmental mandates for clean air, land, and water. One violation can cost \$50,000 or more. Conversely, it can cost an aquatic plant \$60,000 to \$72,000/year to have AW hauled to a landfill. The application of AW to a landfill is not always environmentally sound. If not done properly, it can take months for the AW to decompose. The odor of the decomposing materials can be a nuisance for days and months. Finding usages for the millions of pounds of AW materials produced each year in Louisiana is better than dumping the AW in our landfills, on our lands, and in our waterways.

Four low input methods of processing raw crawfish waste into crawfish waste meal were experimentally tested. The four drying methods used were, (1) concrete basins, (2) tin basins, (3) black plastic basins, and (4) ground basins. Each basin dimension was 3 x 1.22 meters. Approximately 109 kilogram of raw crawfish waste was used. The raw crawfish waste was air and solar dried for each method during the month of June of 2006. The days to drying were not statistically different ( $P > .05$ ) among treatment groups. The percentage yield of dried crawfish waste meal was 69%, 70%, and 67%, for methods 1, 2, 3, and 4 respectively. These differences were not statistically significant ( $P > .05$ ). The cost of constructing a concrete basin, tin basin, black plastic basin, and ground basin are \$92.97, \$25.75, \$13.17, and \$10.77 respectively. These differences were statistically significant ( $P > .05$ ). Odor level was not a factor due to the short drying period during the summer. The data suggests that drying of crawfish waste can be solar and air dried in a relatively short period under favorable weather conditions if properly spread for proper aeration and solar drying. The size and portability of the basins make the process convenient for an array of stakeholders such as home gardeners and general home owners in a rural, urban, and suburban setting. The use of the dried end product has potential for uses as a livestock feed, organic fertilizer, and soil amendment.

Findings are being disseminated to the scientific community in the form of professional paper/poster presentations, and other media outlets. For instance, a presentation was made at the 14th Biennial Association of Research Directors' Symposium, April 1-5, 2006 in Atlanta, Georgia.

**Key Theme:** New Uses for aquatic waste, feed, environment, soil fertility.

**Output:** Activities were conducted to compare several methods of processing AW into AM. The activities included the collecting of AW, experimental set-up, completion of the process for converting AW into AM, data collection, and data analysis. Participants included the project director, research associate, civil service workers, and private industry. A demonstration of the process was conducted at Southern University Agricultural Research and Extension Center (SUAREC) Livestock Field Day on August 20, 2005. The event was held in Baton Rouge, Louisiana. On December 17, 2005, an aquatic meal display was exhibited at the grand opening of Canadaville in Simmesport, Louisiana. A presentation of the findings of the project was made at the 14th Biennial Association of Research Directors' Symposium, April 1-5, 2006 in Atlanta, Georgia.

**Publications/Presentations:**

Walker, C. R., L. Parker, S. Gebrelul, Y. T. Ghebreyessus, F. Mathieu, and A. Harris. 2006. "Crawfish Waste Meal In Livestock Diets: Trash Or Treasure". Association of Research Directors (ARD) # 76, p94 Scientist Competitive Paper. IN: The 14th Biennial Association of Research Directors' Symposium, April 1-5 2006, Atlanta, Georgia.

**Outcome:** Among the participants at one of the presentations was the staff from Magnaville Farm. They indicated that they would be interested in knowing more about the project to explore ways of adopting some of the recommendations. Over 2,000 pounds of raw crawfish and crab waste was solar dried during the summer of 2006. The dried wastes were ground into crawfish and crab waste meals. The aquatic waste meals were used as a low cost and low input organic fertilizer for the farm pecans orchard. Another farm operation located in southeast Louisiana will be using the ground basin method in the summer of 2006. The end products will be used as a protein supplement for their swine and cattle herd. Other participants at the presentations also indicated that they gained new knowledge from the findings and would consider trying some of the recommendations.

**Impact:** Magnaville Farm (currently transitioning to an organic farm) has adopted the concrete solar drying method. During the summer of 2006, Magnaville Farm solar dried over 2,000 pounds of crawfish and crab waste. The dried waste was used as an organic fertilizer for their five acre (2.023 hectares) pecan orchard.

**Scope of Impact:** Findings from the study will be disseminated to the scientific community in the form of professional paper/poster presentations, and other media outlets.

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana



#### **4. Effects of Low-Cost High Tunnel and Formulated Media on Production of Selected Horticultural Crops for Niche Market**

Niche market urban gardening that involves the use of low-cost production systems and the utilization of low-cost agricultural biomass as a medium for production is of great value to small and limited resource farms which account for 60% of farms in Louisiana. The niche market production of out-of-season high cash-value vegetables and nutraceutical crops that are in demand by consumers can help farmers obtain a higher market price to sustain farm profitability. The use of biomass wastes for crop production can enhance state economy by reducing expenses needed to dispose such biomass wastes. Thus, urban niche market gardening can not only enhance food security for the metropolitan areas but also has the potential to generate private entrepreneurship because it is easily adaptable to individual and family lifestyles. Therefore, this research was designed to develop low-cost sustainable production systems for niche market in and around metropolitan areas.

A field experiment using a completely randomized design of 36 plants was conducted in 2006 to evaluate the performance of two species of victor-type of roselle (*Hibiscus sabdariffa*), one originated from India and one originated from Nigeria. Both varieties bloomed prolifically. Hibiscus cultivar from Nigeria showed earlier flower production than Indian cultivar. First-harvest of fresh fruit (calyces plus seed pod) yield of Nigeria hibiscus variety was 1,735 kg/ha. The fruit of the Indian variety was immature and yet to be harvested. Based on initial trials, there is a need in the future to screen and select earlier flowering varieties to avoid freeze damage. Hibiscus is a highly demanded functional food crop with low cultural requirements and with great potentials for organic niche market.

Preliminary experiments were also initiated in 2006 to (1) evaluate the formulated Louisiana biowastes as growing media, namely woodchip nursery soil mix, woodchip garden soil mix, a commercial pro-mix (Peat moss + perlite) and rice hull + cotton gin trash (1/3:v/v), on hibiscus plant performance, and (2) evaluate high tunnel shade colors (black, gray, red and blue cloth) on growth and development of hibiscus.

**Key Theme:** Economical and sustainable production system

**Output:** A container experiment was conducted in 2006 to evaluate the production of this crop under four fertilizer treatments. Each treatment consisted of seven individual 5-gallon container grown Nigeria-originated hibiscus variety. They were organic Fertrell 2-4-2, organic Agreaux 5-5-5 and inorganic fertilizer 5-10-25 and the control, and the fresh fruit yield data for these treatments were 146g, 201g, 279g and 130g per plant, respectively. All fertilizer treatments increased flower production, fruit-calyces yield significantly compared to the control. Dry matter content was 4.09 percent, 5.62 percent, 3.65 percent and 6.04 percent for Fertrell 2-4-2, Agreaux 5-5-5, inorganic 5-10-25 and the control, respectively.

Three soil mixes using 5-gallon containers were evaluated in 2006 for the production of hibiscus fruit calyces. No fertilizer was applied to the treatments. The treatment of silty clay soil + bagasse (1/1:v/v) produced early flowering and higher yield than a commercial peat moss/perlite mix + rabbit manure (1/4:v/v) and woodchip nursery mix

with per-plant fresh fruit yield data of 128g, 86g and 61.4g, respectively. Hibiscus calyce samples (dried and fresh) from the fertilizer and field trials are being laboratory-prepared for flavonoid analysis.

Several presentations were made based on this research at professional meetings including the 14th Biennial Association of Research Directors' Symposium in Atlanta, Georgia and the Baton Rouge Hibiscus and Herb Societies. One hibiscus workshop field day was held in Fall 2006. Forty Louisiana farmers attended the workshop and toured hibiscus experiment plots. Demonstrations on alternative uses of hibiscus for instance, tea and jelly were conducted.

### **Publications/Presentation**

Chin, K. L., Yadong Qi, Chin, Fatemeh Malekian, Mila Berhane, and Janet Gager. 2006. Food Value of Roselle, Hibiscus Sabdariffa – Tea. SUAREC CIRCULAR – Sustainable Plant and Animal Production Systems No. 303.

Chin, Kit L., Yadong Qi, Mila Berhane and James Simon. 2006. Catnip: A Potential New Crop for the South, p302-303. IN: The 14th Biennial Association of Research Directors' Symposium, April 1-5 2006, Atlanta, Georgia.

Qi, Yadong, Kit L. Chin, Owusu Bandele and Milagro Berhane. 2006. Introducing Roselle (Hibiscus Sabdariffa) to American Farmers as a Value Added Cash Crop - Cultivar and Fertilizer Trials in Louisiana, p 304-305. IN: The 14th Biennial Association of Research Directors' Symposium, April 1-5 2006, Atlanta, Georgia.

Kit L. Chin, Yadong Qi, and Mila Berhane. 2005. Vertical Gardening. SUAREC CIRCULAR – Sustainable Plant and Animal Production Systems No. 301  
[http://www.suagcenter.com/fact\\_sheets.html](http://www.suagcenter.com/fact_sheets.html)

Kit L. Chin, Yadong Qi, and Mila Berhane. 2005 Biological Characteristics, Nutritional and Medicinal Value of Catnip, *Nepeta cataria*. SUAREC CIRCULAR – Sustainable Plant and Animal Production Systems No. 302  
[http://www.suagcenter.com/fact\\_sheets.html](http://www.suagcenter.com/fact_sheets.html)

Yadong Qi, Kit L. Chin, Fatemeh Malekian, Mila Berhane, and Janet Gager. 2005. Biological Characteristics, Nutritional and Medicinal Value of Roselle, Hibiscus Sabdariffa. SUAREC CIRCULAR – Urban Forestry Natural Resources and Environment No. 604 [http://www.suagcenter.com/fact\\_sheets.html](http://www.suagcenter.com/fact_sheets.html)

Two newsletter articles were published in the Baton Rouge Hibiscus Society Newsletter:

Yadong Qi, 2005. Introduction of Roselle, Hibiscus Sabdariffa. Baton Rouge Hibiscus Society Newsletter, April issue, 2005

Yadong Qi and Fatemeh Malekian 2005. Food and Nutritional Value of Roselle, Hibiscus Sabdariffa. Baton Rouge Hibiscus Society Newsletter, May issue, 2005

**Outcome:** A presentation to educate citizens about culture and uses of hibiscus was conducted at the Southwest Center for Rural Initiatives in Opelousas, Louisiana along with a hibiscus field day which resulted in 29 Louisiana farmers seeking more information to select hibiscus as one of their 2007 crops for local niche markets. Roselle seeds and hibiscus seedlings were provided free of charge to farmers. The project has attracted local, regional and international attention through publications on the Southern University Ag Center website, conferences, seminars, and field days. Requests for information on this project have been received from farmers in Georgia, researchers and scholars from India, Tanzania and Malaysia.

Preliminary findings have shown that roselle has the potential to be grown in the warm region of southern USA as a cash crop, to meet market needs. Also, due to its vigorous growth under Louisiana weather conditions, catnip is another promising new cash crop for Louisiana farmers that can meet the commercial demand for raw catnip for essential oil production.

**Impact:** The project has attracted local, regional and international attention through publications on the Southern University Ag Center website, conferences, seminars, and field days. There is a growing interest from growers, consumers, researchers and citizens in the use of Hibiscus sabdariffa in tea and food products because of its high anti-oxidation effect. Twenty-nine Louisiana farmers are seeking more information to select hibiscus as one of their 2007 crops for local niche markets

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana

**Collaboration:** Scientists at Rutgers University are collaborating with this project. We are also collaborating with our clientele locally, nationally, and internationally.

**Scope of Impact:** State, regional, national and international users may benefit tremendously from this study.

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## **EXTENSION PROGRAMS:**

The following outreach programs were conducted for clients in the state to enhance their capacity to carry out an agricultural production system that is highly competitive in the global economy.

1. The Small Farmer Agricultural Leadership Training Institute (2501 Project)
2. Small Farm Viability
3. Adding Value to New and Old Agriculture Products
4. Outreach and Assistance to Socially Disadvantaged Farmers and Ranchers  
Louisiana Family Farm Technical Assistance Project (2501 Project)

## 1. The Small Farmer Agricultural Leadership Training Institute

The overriding goal of the project was to promote the sustainability of small family farms through enhanced business management skills and leadership development. Twenty-two (22) producers from Oklahoma, Mississippi, Texas, Florida, South Carolina, North Carolina, Louisiana, Kentucky, Arkansas and Missouri were selected to participate in the inaugural class. They each brought with them a unique set of experiences, expertise as well as expectations.

**Output:** Eight trainings sessions were conducted in FY 2006 with the participants of this project. The themes were as follows: Session One – Developing the Leaders Within; Session – Two – Understanding Community and Self; Session Three - Agricultural Legal Issues and Risk; Session Four – Diversity and Planning; Session Five – Communicating for Business; Session Six – Creating an Entrepreneurial Mindset; Session Seven – Networking and Professional Development. This session was held as a pre-conference session at the Professional Agricultural Workers Conference at Tuskegee University; Session Eight – Charting Our Course (Promoting Our Businesses).

The final session - Session 9 - East Coast Study Tour and the Graduation Ceremony will be held in Washington, D.C. early in FY 2007. The highlight of the session will be a presentation at the graduation ceremony by the Honorable Mike Johannes, Secretary of Agriculture.

The major topical categories for this training series were Leadership Development, Legal Risk, Communicating Effectively, Conflict Resolution and Mediation, Leadership Styles and Assessment, USDA Programs and Services, Agricultural Policy Issues; Serving on Governing Boards, Basic Computer Applications to include Computerized Record Keeping and Community Leadership Development.

**Outcome:** One of the participants has provided leadership in starting a Farmers' Market; another participant was featured in an educational training video produced by Southern Sustainable Agriculture Research and Education. Some participants have started while some are considering alternative enterprises. Comment by a participant in the leadership class: "After the first leadership meeting, I was inspired to form a leadership development class for Winston County Self Help Cooperative". Two of the participants were selected as the "Small Farmer of the Year" in their states. One of the participants entered into a Community Supported Agriculture (CSA) agreement with a major university.

**Impact:** After attending eight sessions, participants said they developed useful and lasting networks, critical leadership and business management skills, and also shared both interstate and intrastate ideas in agricultural problem solving. Some participants have made presentations about their business at professional conferences. Comment by a participant in the leadership class: "After the first leadership meeting, I was inspired to form a leadership development class for Winston County Self Help Cooperative". Five of the participants were able to use their newly acquired skills to secure external funding for their cooperatives and communities. Three of the participants were able to secure contracts with major food chains for their produce.

**Scope of Impact:** State of Louisiana along with Oklahoma, Mississippi, Texas, Florida, South Carolina, North Carolina, Kentucky, Arkansas and Missouri. The impact of this project extends beyond these southern states.

**Funding Source(s):** USDA/CSREES 2501 Project and supporting funds from the State of Louisiana

## **2. Small Farm Viability**

Small farm viability and sustaining the family farm continues to be a very important initiative for the Southern University Agricultural Research and Extension Center. Our target audiences primarily consist of limited resource producers who are categorized as being socially disadvantaged. According to the most recent Census of Agriculture data (2002), all minority groups, to include African Americans are significant contributors to agriculture and their numbers have increased since the last census in 1997. The 2002 Census of Agriculture reported a total of 2,317 African American farmers in Louisiana compared to 1166 reported in 1997. This represents a 98.7% increase in the number of African American farmers being counted.

**Output:** Financial management workshops and training meetings focused on planning, analyzing, marketing of products, risk management, legal issues, alternative enterprises, alternative markets, and being able to control business performance by clients. Clients were trained on the techniques of record keeping to enhance their knowledge/skills to enable them to maintain records of their alternative crops, alternative markets, income, expenses, profit/loss, assets, liabilities, etc. Additional information was provided on tax preparation, farmers markets, sustainable agriculture, new and available programs and services at various locations. Over 22,400 persons benefited from the workshops, training sessions and individual contacts by the agricultural faculty and staff. Nineteen small farmers from East Baton Rouge and surrounding parishes enrolled in the Beef Education Program “From Producing to Packaging” in FY 2005. Topics covered during the training sessions were: Best Management Practices of Beef Cattle, Farm Management and Record Keeping, Understanding Farm Taxes, and Estate Planning. The 19 small producers graduated early in FY 2006 and are currently applying knowledge/skills gained to improve their enterprises.

Five hundred small producers received farm safety and pesticide certification training and of that number, 220 persons were either certified or recertified as pesticide applicators. Field days and farm demonstration tours were conducted throughout the state to provide educational information to producers. Over 10,000 pieces of extension materials were distributed in the form of newsletters, newspaper articles, technical reports, research highlights, special publications, informational flyers, television broadcasts and fact sheets to the clientele. Environmental issues, water quality, farm safety and pesticide certification continue to be hot topics among agricultural producers. Several meetings were held addressing these issues.

**Impact:** Five hundred and fifty small producers received farm safety and pesticide certification training and of that number, 220 persons were either certified or recertified as pesticide applicators. Producers have a better understanding of their farm situation and outlook and an awareness of what skills and resources would be necessary to improve their individual situation. Forty-five percent of the clients adopted practices introduced to them.

Nineteen small farmers from East Baton Rouge and surrounding parishes received certificates of completion during the Center's first graduation ceremony, concluding the Beef Education Program "From Producing to Packaging". Knowledge gained is applicable to cattle operations/businesses, and ultimately impacts economic development in the community.

**Scope of Impact:** Small and limited resource producers throughout the State of Louisiana.

**Sources of Funds:** Smith-Lever Act, Section 1444 and supporting funds from the State of Louisiana

### **3. Adding Value to New and Old Agricultural Products**

SUAREC's goals were to help producers become effective managers of the enterprises they currently operate, and to help find new and alternative enterprises to give producers in the state of Louisiana a comparative advantage due to the scale of production and/or effective marketing strategies. Target enterprises include meat goats, beef cattle, pastured poultry, rabbit processing and vegetables. Trainings, workshops and meetings were held to provide education and information to the clientele concerning the various ways they can add value to their commodities and also to inform them of alternative enterprises which may be suitable for their individual situations and circumstances. About 10,500 contacts were made and information disseminated on meat goats, beef cattle, pastured poultry, rabbit processing, home gardens, vegetables and ornamentals. Marketing is a major concern of producers, SUAREC focused on ways of assisting them through diversification and adding value to their commodities. About 915 producers in the state received individual and commodity specific marketing assistance.

**Impact:** 1,665 livestock and vegetable producers increased their awareness and adopted one or more value-added approaches or practices such as developing direct, regional and terminal marketing channels. About 50 percent of these producers are now selling at Farmers Markets and/or directly to consumers.

**Scope of Impact:** The Southern University Agricultural Research and Extension Center, in collaboration with the Louisiana Department of Agriculture, the Louisiana State University Agricultural Center and local grassroots farmer organizations delivered the educational programs to enhance the capacity of small-scale farmers in Louisiana to operate an agricultural system that is highly competitive in the global economy.

**Funding Source(s):** Smith-Lever Act, Section 1444 and supporting funds from the State of Louisiana

#### **4. Outreach and Assistance to Socially Disadvantaged Farmers and Ranchers Louisiana Family Farm Technical Assistance Project (2501 Project)**

This project is an effort to directly address the most significant problem confronting small and mid-size farms, low net farm income. This can be a result from many different factors, or combination of factors. Unless a solution can be found to increase individual farmer's net income and total net farm income, rural communities and their associated infrastructures will continue to decline. The overriding goal of this project is to improve the farm management skills and processes among cooperating farmers and to expand opportunities for new and existing farmers to achieve higher net farm income. This goal will be achieved by helping farmers adopt the best practices in marketing, farm management and enterprise selection as well as improving their ability to access available governmental programs and other services. The specific objectives of this project include the following: (i) provide technical assistance related to record keeping, production practices, farm and risk management; (ii) increase awareness of basic agricultural knowledge, resources and services available at the local, state, regional, national and international levels; (iii) increase youth awareness and participation of agricultural programs, careers and related activities; and (iv) increase marketing potential through the use of commodity selection and other viable avenues.

**Output:** The 2501 Project has provided technical and educational assistance to approximately 115 farm families in Concordia, Franklin, Tensas, Morehouse, Ouachita, East Carroll, West Carroll, Madison and Richland Parishes. The program assisted twenty-six producers in the targeted parishes in developing viable farm and home plans which are crucial tool used in borrowing operating expenses from the Farm Services Agency. This year, there were eight new borrowers. The program serves as either the advisor or co-advisor for each of these youth loans.

Last fiscal year (FY 2005), the 2501 project, in coordination with the Louisiana Agricultural Mediation Project and a Risk Management Education grant at the Southern University Law Center held the first Agricultural Legal Issues Training Conference in Baton Rouge, Louisiana. This conference focused on those legal issues most often faced by socially disadvantaged, limited resource farmers and ranchers. The targeted audience for this conference was change agents, extension, 2501 personnel and researchers at the 1890 institutions as well as others who work with the clientele. Approximately 60 persons attended this conference. Follow-up indicate that these producers are utilizing the knowledge they gained in their daily operations.

**Outcome:** Of the 115 families contacted, 66 participated in the USDA – Natural Resources Conservation Service, Environmental Quality Incentives Program (EQIP) cost share program. Eight youth borrowed \$36,000 from Farm Service Agency to begin their own agricultural operation as a separate entity from their families and 24 youth

participated in the Louisiana Department of Agriculture and Forestry Youth Loan program borrowing \$60,000 to begin their livestock operations. During the last year, the 2501 project outreach specialist has assisted producers in the targeted area with borrowing approximately \$898,000 in guaranteed loans and in excess of \$3.4 million in direct loans.

Much energy and many educational efforts have been made relative to beef cattle production. As a result of the 2501 efforts, 23 agricultural producers have diversified their enterprises to include beef cattle production. The Center currently provides the majority of the education to this audience to include herd health, nutrition, and management and assists in locating quality animals to improve the quality of the herd or even to be used to begin the herd. Raising beef cattle has become a popular and financially rewarding enterprise for small, limited resource producers. Currently, the 2501 specialist is working with 93 adults and youth in this endeavor.

**Impact:** Producers benefited from a 90 percent cost share allowed (to have approximately \$363,000 worth of environmental and conservation practices installed on their land), and at an out of pocket expense of \$33,000 or an average of \$5000, these practices were implemented on each farm. Two of the producers purchased approximately 400 acres to increase the size of their operation. Four percent of the producers have graduated to borrowing from commercial lenders.

As a result of encouragement, planning and coordination by the project, small farmer organizations continue to receive the majority of their primary organizational programming instruction and education from the 2501 staff. Eight limited resource producers in the targeted area of Louisiana vied for and were elected to positions of the various NRCS boards in the different parishes. This is a significant increase from the one just a few years ago.

The beef cattle initiative has increased the producers' income by more than \$257,000 collectively. The minimum dollar increase per family was \$2,500 and the maximum was \$40,000.

**Scope of Impact:** State of Louisiana - In areas of the state where the 2501 efforts are focused, there seems to be a changing face of agriculture. More youth are expressing an interest in learning more about agriculture and even exploring options relative to agriculture such as livestock projects and/or community gardens. Increased numbers of youth are applying for and participating in summer programs offered by the Southern University Agricultural Research and Extension Center and the College of Agricultural, Family and Consumer Sciences.

**Funding Source(s):** USDA/CSREES 2501 Project and supporting funds from the State of Louisiana

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## **National Goal 2: A safe and secure food and fiber system.**

SUAREC's research and extension programs collaboratively addressed National Goal 2 as follows:

### **RESEARCH PROJECTS:**

In FY 2006, no research was specifically conducted under Goal 2 however, research conducted under Goals 1 and 3 also addressed Goal 2.

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### **EXTENSION PROGRAMS:**

According to USDA/Food and Nutrition Service, "In each year from 2002 to 2004", eight states including Louisiana, "had significantly higher food stamp participation rates than (the other) two thirds of the states". In the state of Louisiana, data indicate an increase in average household recipients from 230,083 for FY 2002/2003 to 273,726 for FY 2004/2005. About 273,726 families received food stamps in the state to feed at least 700,235 people in FY 2004/2005. The average amount given in FY 2004/2005 was \$252.03 per household with an average household consisting of 2.56 people (Louisiana Department of Social Services). However, despite the increased numbers of individuals receiving governmental assistance in the form of food stamps, there are still food insecure households in Louisiana. Nationally, Louisiana ranks fourth in food insecurity and seventh in hunger-filled households. Sadly, most of these households are comprised of a large percentage of young children and the elderly.

The following extension programs were conducted to achieve National Goal 2: A safe and secure food and fiber system.

1. Families First – Nutrition Education and Wellness System (FF-NEWS)
2. Preventing Foodborne Illness in a Vulnerable Lower Mississippi Delta Population

### **1. Families First – Nutrition Education and Wellness System (FF-NEWS)**

The Families First – Nutrition Education and Wellness System targets food stamp eligible and food stamp participants to assist the state of Louisiana in combating food insecurity and also in providing nutrition education and intervention activities. In FY 2005/2006 Louisiana reported that on average there are 666,532 monthly recipients of Food Stamp (7,998,382 for the period) for an average monthly expenditure of \$70.73 million (or \$848.80 million for the period) (Louisiana Department of Social Services, 2006). A major component within the Families First – Nutrition Education and Wellness System program is assisting families, with not only stretching their food dollar, but also in incorporating low-cost healthy menu selections within their meal plan. Educational materials were distributed to targeted FF-NEWS parishes which have full-time Nutrition Program Assistants that provide nutrition information. These parishes include: East Baton Rouge, East Feliciana, Ascension, St. James, East Carroll, West Carroll,

Avoyelles, Evangeline, Calcasieu and Lafayette. This program is currently in the process of expanding its outreach to include Orleans and St. Tammany parishes.

Since 2000, the Southern University Ag Center and ten other 1890 universities formed a consortium to help limited-resource families improve dietary and health behaviors through intensive nutrition education. Nutrition Program Assistants in six targeted parishes have provided nutrition information to persons receiving or eligible to receive food stamps. The FF-NEWS program is a nutrition intervention program designed to help with selection and preparation of meals consistent with cultural traditions while improving overall health.

**Key Theme:** Food Accessibility and Affordability, Nutrition, Food Management and Resource Education

**Output:** Information was provided through one page fact sheets entitled, “Nutrition Nibbles”, that utilized concepts presented in lessons from the FF-NEWS curriculum. Some of the topics were:

- Fall Into Healthy Eating;
- To Bean or Not to Bean;
- Don’t Be a Scrooge for the Holidays (tips on healthy holiday eating).
- A 7 part series on the new Food Guidance System “MyPyramid”;
- Fad Diets & Bogus Health Claims
- 12 Ways to Slash Your Grocery Bill

Each 30 minutes lesson included helpful tips and an activity along with a food demonstration emphasizing the designated topic for the month and was taught in a classroom format. Many of the food demonstrations utilized foods received by the participants through food supplemental programs as well as lower fat, sodium, and sugar alternative and cost recipes that were easy to prepare. Food demonstrations and other supplemental activities were provided to assist participants with creating healthy meals and stretching the food dollar with their family.

A total of 188,878 individuals (direct and indirect contacts) were reached through the FF-NEWS program. Of this number 1,513 were families enrolled in the program, 60,154 were direct contacts (those who attended classes or workshops) and 127,211 were indirect contacts (those who received nutrition education materials such as fact sheets and other handouts). Additionally, 1500 fact sheets were distributed monthly through seniors’ programs in Baton Rouge, New Orleans, and Central Louisiana. Some of those contacted were evacuees of Hurricanes Katrina and Rita who relocated to other parts of the state.

**Outcome:** Pre and Post test are provided to measure behavior change. In the Food Stamp and Food Supplemental Distribution Sites, behavior measures were difficult to assess due to the clientele not reporting to the sites on a consistent basis, such as monthly or quarterly. In these instances success stories were used to measure qualitative behavior change among participants.

Qualitative evaluation information collected by the program staff indicates as follows: My Even Start group is the worst when it comes to trying new foods and this was a challenge. The majority of the groups do not like veggies and fruits so it has been difficult to work with them. But they enjoyed the peas. They stated that they loved the flavor of the bell peppers and smoked meat. *In reference to the Black-Eyed Peas and Smoked Turkey recipe (June, 2006).*

The participants at the Welcome Senior Center enjoyed the recipe that I prepared for them to sample (Yogurt Fruit Crunch) from the introduction to the new MyPyramid fact sheet, *A Pyramid Made Especially for You*. They enjoyed the sample so much that they were asking for second and third samples. *In reference to the Yogurt Fruit Crunch recipe (February, 2006).*

I have successfully gained the trust of my clients and now they are more eager to learn about healthy eating and way they can live healthier lives. They enjoy the samples but must importantly, they enjoy the nutritional information.

A response from a participant at the Romeville Senior Site (COA) on Monday, May 22, 2006, was that I didn't wash my hands before making the "Light Apple Cobbler", on the recipe on the back of the "MyPyramid Oils and Discretionary Calories" handout. What she meant was that it tasted so good. She told me she's 94 years old. That is one of the oldest that attend the site daily. She's also an evacuee out of New Orleans, LA. She said that it was very good.

At the Lutchter Senior Citizen Site (COA) on Tuesday, May 30, 2006, a lady told me when she came to my table after I had finished my class "Since the last two or three times that you have been coming here, I've enjoyed the classes. You have my full attention from start to finish. I enjoy it and learn so much. She went on to say, "My husband and I went for our check up (medical) last week and everything was fine with me. My husband's cholesterol was up and the doctor told him to bring it down". I even noticed that I lost a little weight".

**Impact:** FF-NEWS program is making a difference in the lives of Louisiana citizens. The program has been particularly helpful in assisting 50,000 hurricane evacuees when they were in shelters, as some are still living in temporary trailer parks, and as some attempt to resettle in their permanent homes.

**Scope of Impact:** SUAREC in collaboration with the United States Department of Agriculture/Food and Nutrition Services, the Louisiana Department of Social Services/ Office of Family Support and local parish community and health agencies provides nutrition programs to citizens of Louisiana.

**Funding Source(s):** Smith-Lever Act, Section 1444 and supporting funds from the State of Louisiana

## **2. Preventing Foodborne Illness in a Vulnerable Lower Mississippi Delta Population**

The inability to perform mentally and physically may be major contributors to the perpetuation of poverty in these individuals. Food-insecure individuals comprise a vulnerable population at increased risk of illness and for whom medical treatment may not be readily accessible. The situation is particularly serious in the LMD where an estimated 684,000 people in Louisiana face hunger each year (Second Harvesters, 1998).

Disadvantaged urban and rural populations of the Lower Mississippi Delta (LMD) are at risk from poor nutrition, a higher incidence of foodborne illness vectors, and their generally more compromised health resulting from lack of resources, medical services, and knowledge about nutrition and food handling practices. Access to safe, nutritional food through food recovery operations can help, but personnel handling these foods must be aware of the sanitation and thermal maintenance requirements implicit in perishable food distribution. Food recovery encompasses the food's history, from its release by the donor, through delivery, storage, preparation and consumption. The investigators surveyed existing food recovery operations and observe their food storage and handling facilities and current food-handling procedures. Existing Louisiana, Mississippi and Arkansas universities' research, extension and teaching faculty and appropriate government agencies were marshaled to standardize procedures and training protocols throughout the LMD regions and to extend their availability to LMD food handling personnel through direct-contact and distance learning outreach channels. Research was conducted in two areas: evaluations of the effectiveness of food recovery organizations' food handling practices by temperature audits and HACCP-based analyses and the effectiveness of the training curriculum. This curriculum, developed specifically for food recovery agencies, include lesson plans, fact sheets and two videos. Once trained in the curriculum, food recovery managers were used to train their personnel.

**Key Theme:** Food Safety

**Output:** Since the completion of the "Serving Food Safely" curriculum, SU Ag Center staff conducted 132 meetings and made 2,630 contacts to explain the utilization of the material. Also, fact sheets and special publications with program related topics were produced and distributed to individuals and families.

**Publications:** Fact Sheets on the following subjects were published and disseminated to clients:

- What Causes Foodborne Illness?
- Preventing Foodborne Illness
- Keeping Food Out of the Temperature Danger Zone
- Personal Hygiene and Handwashing Procedures
- Cleaning and Sanitizing
- Handling and Serving Food Safely
- Food Storage
- Transporting Food Safely

HACCP for Control of Food Safety  
Cleaning and Inspecting Fruits and Vegetables

A videotape – Transporting Food Safely was also produced and used for educational purposes.

The “Serving Food Safely” Curriculum is currently being taught in three states, Louisiana, Mississippi and Arkansas. SU Ag Center staff has made a total of 2,630 contacts since putting the curriculum in use.

Video: Transporting Food Safely

**Outcome:** Results from the evaluation of the effectiveness of the food safety curriculum showed that the curriculum was used successfully to improve food safety knowledge for the participants in Louisiana and other participating states.

**Impact:** The “Serving Food Safely” Curriculum is currently being taught in three states, Louisiana, Mississippi and Arkansas. Preliminary data suggest that all persons (100%) attending sessions thought that they were successful and that the knowledge/skills gained would be of great benefit to their establishments and clients. The program assisted hurricane Katrina and Rita evacuees as they lived temporarily in shelters and as some moved into temporary housing.

**Scope of Impact:** SU Ag Center is collaborating with LSU Ag Center, University of Arkansas, and Mississippi State University in this program. Impact is primarily in the Southern region, but could also extend to other parts of the United States.

**Funding Source(s):** Smith-Lever Act, Section 1444. USDA – National Integrated Food Safety Initiative and supporting funds from the State of Louisiana

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**National Goal 3: A healthy, well nourished population.**

**RESEARCH PROJECTS**

SUAREC’s research projects conducted to ensure a healthy, well nourished population are as follows:

1. Nutrition Label Use, Nutritional Knowledge, and Food Security in Louisiana
2. Early Nutritional Intervention Strategies for Head Start Teachers in Louisiana
3. Assessing Consumer Acceptance of Value-Added Goat and Rabbit Meat Products
4. New Technologies for the Utilization of Textile Products

## **1. Nutrition Label Use, Nutritional Knowledge, and Food Security in Louisiana**

Heart disease, cancer, stroke, and diabetes are four of the leading causes of death in the United States. All have been linked to poor diets. Louisiana has the second highest obesity rate in the United States, and the highest death rates from heart disease, cancer, and diabetes. Because of these dismal statistics, Congress passed the Nutrition Labeling and Education Act (NLEA) in 1990 to help consumers to make healthier food choices. The Act was implemented in 1994. The passage of the Welfare Reform Act (WRA) in 1996 dramatically changed the way the government provides assistance to poor families and children. Louisiana has a high poverty rate therefore; the WRA could adversely affect the food security of Louisiana's poorest families.

The effectiveness of the Nutritional Labeling and Education Act and the Personal Responsibility and Work Reconciliation Act (Welfare Reform) on label use, nutritional knowledge and awareness, and food security in Louisiana was examined. Specific objectives were to: examine primary food shoppers or meal preparers' nutritional knowledge, awareness of, and attitudes toward diet and health; determine the level of label use in food shopping and meal preparation decisions; analyze the extent and severity of food insecurity; and assess the role of socioeconomic and demographic characteristics on knowledge, attitudes, behavior, and food insecurity. A stratified random telephone survey of Louisiana households targeted primary grocery shoppers or meal preparers and contained 1,300 respondents.

For nutritional knowledge & awareness, respondents were asked if they knew of any health problems caused from being overweight or obese and from excessive or insufficient consumption of selected nutrients, and if so, to identify the health problems. Most respondents had heard about various health problems caused by diet; 89 percent correctly identified problems caused from being over weight or obese; 85 percent identified problems caused from eating too much salt or sodium; but, 56 percent could not identify health problems that could result from consuming insufficient fiber. College graduates and respondents 45 years old were more likely to have heard about the health problems caused by being overweight or obese, from consuming too much salt or sodium, cholesterol, fats, and sugars, and from consuming insufficient amounts of calcium and fiber.

For attitudes toward diet & health, 88 percent said diet could make a big difference in a person's chances of getting a disease such as heart disease or cancer. Two-thirds agreed that there were so many recommendations about healthy ways to eat that it was hard to know what to believe; 75 percent used labels when making food purchasing decisions; 73 percent got nutritional information from newspapers, magazines, or books, and 69 percent from doctors, nurses, and health professionals.

Label users were more likely to have household incomes above \$50,000; nonusers were more likely to have household incomes below \$15,000; 56 percent of the label users wanted to learn more about interpreting information on food labels.

For Food sufficiency, respondents were asked to describe food consumption in their households for the last 12 months. Emphasis was on whether households (a) had enough of the kinds of food they needed to eat; (b) had enough food, but not always the kinds of

food they needed to eat; (c) sometimes did not have enough to eat; or (d) often did not have enough to eat. Respondents on **c** & **d** were also asked for information on their strategies to overcome food insufficiency. Sixty-nine percent said they had enough of the food they needed to eat; 26 percent had enough food, but not the preferred foods; four percent did not have enough food. Households with insufficient food were more likely to have residents ages 18-34, women, non-Caucasians, incomes below \$25,000, single parents, with high-school education or less.

**Key Theme:** Nutrition and Food Security

**Output:** The two journal articles were also presented at professional meetings to other research scientists. Printed copies of the extension education reports were made available to the SU Ag Center faculty and staff, especially the extension personnel for dissemination to clients. Through these publications, 2,500 individuals were contacted, the indicated that information will be useful to them and to their family members. Dissemination of research findings to other stakeholders have been through presentations at seminars, professional meetings, research publications, and progress reports.

**Publication/Presentation:**

McLean-Meyinsse, P. E. and Nicholas A. Larks. "Measuring Consumers' Awareness of the Major Health Problems Caused by Excessive Sodium Consumption. *Journal of Food Distribution Research*. 37, 1 (March 2006):108-112.

From Previous Research Project

McLean-Meyinsse. "As Cheese Consumption Soars Nationally, How Do Consumers in the Southern United States Rank Nutritional and Non-Nutritional Attributes When Making Cheese Purchasing Decisions?" *Journal of Food Products Marketing*. Volume 12, No. 1, Spring 2006. Pages 15-29.

**Extension and Education Reports:**

McLean-Meyinsse, P.E., D. Jones, and C. Ferrygood. "Chew on These Fat Facts." Research Report Number 9, Southern University Agricultural Research and Extension Center, August 2005.

McLean-Meyinsse, P.E., D. Jones, and C. Ferrygood. "Bone-Up on Calcium." Research Report Number 6, Southern University Agricultural Research and Extension Center, July 2005.

McLean-Meyinsse, P.E., D. Jones, and C. Ferrygood. "Can Louisiana Residents Identify Health Problems Related to Overweight and Obesity?" Research Report Number 7, Southern University Agricultural Research and Extension Center, July 2005.

McLean-Meyinsse, P.E., D. Jones, and C. Ferrygood. "How Sweet Is Your Tooth?" Research Report Number 8, Southern University Agricultural Research and Extension Center, July 2005.

McLean-Meyinsse, P.E., D. Jones, and C. Ferrygood. "Feasting with Fiber." Research Report Number 3, Southern University Agricultural Research and Extension Center, June 2005.

McLean-Meyinsse, P.E., D. Jones, and C. Ferrygood. "The Low Down on High Cholesterol." Research Report Number 4, Southern University Agricultural Research and Extension Center, June 2005.

McLean-Meyinsse, P.E., D. Jones, and C. Ferrygood. "Slow Down, Danger Ahead High Sodium." Research Report Number 5, Southern University Agricultural Research and Extension Center, June 2005.

McLean-Meyinsse, P.E., D. Jones, and C. Ferrygood. "The Low Down on High Cholesterol". Research Report Number 4, Southern University Agricultural Research and Extension Center, May 2005.

McLean-Meyinsse, P.E., D. Jones, and C. Ferrygood. "Feasting with Fiber". Research Report Number 3, Southern University Agricultural Research and Extension Center, May 2005.

McLean-Meyinsse, P. E. and D. Jones. 2004. "The ABCs for Good Health: How Do Louisiana Consumers Rank Selected Recommendations from the Dietary Guidelines for Americans?". The 2004 Conference of the Food Distribution Research Society, Morro Bay, California, October 10 – 13, 2004.

McLean-Meyinsse, P. E., D. Jones and C. Ferrygood. "How Do Louisiana Consumers Rank the Dietary Guidelines for Americans?". Research Report Number 2, Southern University Agricultural Research and Extension Center, July 2004.

McLean-Meyinsse, P. E. and D. Jones. "Nutritional Information Sources, Label Use, and Attitudes Toward Food Labels". Research Report Number 1, Southern University Agricultural Research and Extension Center, February 2004.

**Outcome:** The end results show (a) how well Louisiana residents understand the information on the nutrition facts labels, (b) the level of label use in purchasing decisions, (c) the degree of accuracy in linking diets and health-related illnesses, and (d) the level and intensity of hunger and food insecurity in the state. Other indicators are, dietary changes through greater nutritional awareness; changes in dietary practices; and a healthier population both in Louisiana and the nation.

Two undergraduate students worked on the project in the summer, and one used a subset of the data for his senior thesis. The students indicated that by working on the project, they had broadened their awareness about diet and health, and this had caused them to increase their usage of the Nutrition Facts panels to make better food choices. The project's findings have been distributed to students/youth since they are within the 18-24-age group, to extension agents for further distribution to Louisiana residents – adults and youth, and to colleagues through presentations at seminars, professional meetings, and research publications. Extension agents indicate that clients are utilizing the information and are also reading nutrition labels. Additionally, college students who were exposed to



this research and the findings developed greater awareness of the health problems facing the country, and learned how to conduct scientific research.

Additionally, research highlights have been published in bulletins and are being disseminated by extension agents to clients who are predominantly low income and socially disadvantaged.

**Impact:** One benefit of a healthier population is lower healthcare cost. Given that the State of Louisiana spent \$1.4 billion between 1998 and 2000 on medical expenses related to adult obesity, any cost savings in this area could help fund worthy projects, particularly education. The study started in 2002, eight years after the introduction of Nutrition Facts panels on processed foods, and six years after the Welfare Reform Act of 1996. Between 1991 and 2004, the state's adult obesity rate grew from 16 to 27 percent, and the percentage of overweight or obese residents rose from 49 to 63 percent. The largest increases occurred within the 18-24-age group. The project's results have been distributed to students/youth since they are within the 18-24-age group, to extension agents for further distribution to Louisiana residents – adults and youth, and to colleagues through presentations at seminars, professional meetings, and research publications. Reports from schools and extension agents indicate that information on the Nutritional Labeling and Education Act, and on how to read and use food labels are being incorporated into course syllabi. There is a strong probability that some of the students will begin to use the Nutritional Facts panels when making food purchasing decisions. Additionally, college students who were exposed to this research and the findings developed greater awareness of the health problems facing the country, and learned how to conduct scientific research. The latter will be a tremendous asset as the students pursue masters and doctoral degrees.

**Scope of Impact:** The study will provide needed empirical data about food insecurity in Louisiana, the level of nutritional knowledge, awareness, and attitudes towards diet and health. The impact of the findings of the study will extend beyond the state of Louisiana.

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana

## **2. Effectiveness of Early Nutritional Intervention Strategies for Head Start Teachers in Louisiana**

Obesity is a major concern in children and adults in the United States. Childhood obesity can be prevented or corrected if their diet is modified to decrease intakes of fat, saturated fat, salt, and calories. Prevention of hypertension, heart disease, and diabetes in children with a family history include avoiding becoming overweight or obese, moderating intake of fat, salt, and calories and exercising regularly. Childhood is an important time in human development and is also an ideal time for establishing healthful eating habits and exercise patterns. When children begin eating more meals away from home and when they begin making decisions about what to eat is a good time to provide nutrition

education. Nutrition education can increase children's knowledge about nutrition and help to shape attitudes and food behavior.

The objectives of this project were: 1) to assess the dietary intake and health status of preschool Head Start children; 2) to develop detailed in-center/in-home nutrition intervention strategies (protocols) for Head Start teachers, preschool children and their families, and 3) to assess the effectiveness of intervention protocols in improving dietary intake and health status of preschoolers and their families, as measured by change in knowledge and behavior of teachers and families, the dietary intake, and physical and parameters of children. Supplies and materials were provided to Head Start Teachers including storybooks, puzzles, coloring books, teacher manuals, and food models for use in teaching nutritional interventions. All participating Head Start Centers had the participants to plant fruit and vegetables indoors and outdoors in garden plots and containers to promote healthier food choices.

**Key Theme:** Healthy nutrition education

**Output:** Teacher and parent workshops on early nutritional interventions were developed and presented during the period with outlined strategies for incorporating nutrition education into the curriculum of young children. Head Start Teacher Workshops on the Dietary Guidelines were also developed and presented to teachers in the target area. Obesity and Organ Wise Workshops for Head Start Teachers were conducted at the SU AgCenter. About 2,500 dietary guideline newsletters were prepared and distributed to Head Start parents, teachers, and administrators. The newsletters featured the following dietary guideline guidance: fitness and exercise, eating plenty of fruits and vegetables daily, choosing plenty of grain daily, and childhood obesity. Teachers incorporated nutrition activities into several subject areas including math, reading, art, free play, science and music to improve food habits, food behavior, and health status of the children.

Supplies and materials were provided to Head Start Teachers including storybooks, puzzles, coloring books, teacher manuals, and food models for use in teaching early nutritional interventions. Materials included the following: Feast for 10 Book; Eating the Alphabet Fruits and Vegetables A-Z; Carrot Seed Book; Exercise and Keep Moving; Rabbit Food; My Five Senses; Nutrition Sense and Food Friends Activity Book; Fruit Puzzle (wooden); Food Models (plastic).

All participating Head Start centers had the children to plant fruit and vegetables indoors and outdoors in garden plots and containers to promote healthier food choices and for physical activity. Garden crops included the following among others: Strawberries; Cabbage; Mustard greens; Pumpkins; Green peas; Corn; Squash; and Radishes. Results show that teachers gained new knowledge which helped in

**Publications (Manuals)**

Harris, E. 2006. "Changing Food Habits Using Classroom Curriculum". SU AgCenter Extension and Education Reports (Forthcoming).

Harris, E. 2006. "Using Pizza to Teach Healthy Food Habits". SU AgCenter Extension and Education Reports (Forthcoming).

Southern University Agricultural Research and Extension Center. 2003. Early Nutritional intervention for Head Start Teachers in Louisiana Curriculum Guide (Pending)

Iberville Parish Head Start. 2003. Aim for Healthy Weight and Be Physically Active Daily. Nutrition Newsletter, August.

Iberville Parish Council Head Start. 2003. Dietary Guideline: Interventions for Teaching Child Nutrition and Menu Plans.

Harris, E. 2003. "Managing for Excellence Through Research and Teaching". Paper Presented at the Head Start Regional Conference Proceedings.

**Outcome:** Head Start Centers participating in the research are incorporating dietary guidelines information in the lesson plans and activities. Results and findings from the study are being disseminated to nutrition clinicians, child care administrators, and the research community. Participants at the workshops pledged to make healthier choices in their lifestyles.

**Impact:** Enhancement of the nutritional status, health, and physical well-being of Head Start teachers, children and their families. Adoption of recommended strategies hopefully will help to ensure healthy nutrition in preschool and Head Start children by developing healthy eating habits early in their lives. Post-test survey indicates the following impacts:

- physical activities for children increased by 62 percent (to 100 percent) daily
- 96 percent of the teachers used MyPyramid Food Guide to develop instructions for children
- 64 percent reported increase in fruit and vegetable consumption by children
- 64 percent increased moderation in cholesterol and trans fat intakes
- 100 percent of the teachers reported: establishing gardening projects with children; promoting healthy eating habits with children; integrating and teaching nutrition preparation and facts to children; and using dietary guidelines to develop lesson plans.

Potential impact is the reduction in prevalence of obesity related childhood diseases such as diabetes, hypertension, femoral epiphysis, and lower cholesterol and other lipids.

**Scope of Impact:** Preschools in Louisiana will benefit first from the results of the study. The dietary guidelines can be helpful in promoting positive dietary behavior, healthful lifestyles, and food safety among Louisiana citizens. Additionally, the research could also be of great benefit to preschools in the nation.

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana

### **3. Assessing Consumer Acceptance of Value-Added Goat and Rabbit Meat Products**

The goal of this project is to determine consumer acceptance and marketability of goat and rabbit meat. The specific objectives are to : (1) educate consumers on the nutritional and health benefits of eating goat and rabbit meat; (2) assess the palatability traits (juiciness, texture, flavor, acceptability) of goat and rabbit products (patties, nuggets, sausages); and (3) create a marketing and distribution strategy for goat and rabbit products. During this first year of the project, the objectives were accomplished as follows:

A paper entitled “Assessing the Fatty Acid Profile and Dietary Fiber Content of Oat Bran and Oatrim-Enhanced Beef Patties” was presented at the 14<sup>th</sup> Biannual Meeting of Association of Research Directors in Atlanta, GA, on April 1-5, 2006. The data suggest that oat bran and oatrim reduced total fat and cholesterol in beef patties and may have useful implications for heart patients.

A paper entitled “Assessing the Nutritional Profile of Flaxseed-Enhanced Meat Patties” was presented at the 14<sup>th</sup> Biannual Meeting of Association of Research Directors in Atlanta, GA, on April 1-5, 2006. The data indicated that addition of flaxseed to goat meat patties resulted in a product with reduced total fat and increased polyunsaturated fatty acid.

Nutrition fact sheets relating to “MyPyramid” were created, explained, and disseminated to over 300 adult participants at the annual Nutrition and Health Fair at Berean SDA School in Baton Rouge, LA, in November 2006. MyPyramid was dissected to emphasize the different food groups, the colors they represent, and the daily requirement for each food group. Possible health repercussions, if healthful food choices and the daily requirement were not adhered to, were emphasized.

Fact sheets outlining the 2005 Dietary Guidelines were also explained and disseminated to attendees.

Food safety facts relating to goat and rabbit meat, such as safe handling, thawing, and cooking, were also stressed.

Bulletins elucidating the nutritional quality of goat and rabbit meat when compared to other meats were also disseminated.

Developing healthy eating habits during childhood sets healthy eating patterns for life; therefore, MyPyramid *for kids* “Eat Right, Exercise, Have Fun,” authored by Mypyramid.gov, was displayed in a 4 feet x 3 feet poster and explained to parents and children in grades 1-8. Letter-size copies of MyPyramid *for kids* were disseminated to children in grades 1-8. Children were asked to color the representative stripe for each food group on a blank sheet of MyPyramid *for kids*. They were asked to identify the food groups and explain the advantages and disadvantages of consuming each food item in each group.

MyPyramid worksheet created by Team Nutrition.USDA.gov was explained and disseminated to parents so that they and their children could continue with this activity at home.

**Output:** Information from the project was shared with several groups of clientele including, the Louisiana FFA Regional contest in March 2006, the SU Ag Center Youth Exposition in July 2006, and the Berean SDA School in Baton Rouge, Louisiana on November 2006. About 2,000 publications were disseminated to 300 participants.

The following literature materials have been disseminated:

What is oat bran and oatrim?

MyPyramid: Exploring the Meat & Beans Group.

Finding your way to a Healthier You: *Based on the Dietary Guidelines for Americans 2005*.

Finding your way to a Healthier You: *Portion Control*

Safe handling and storage of goat and rabbit meat

Safe thawing & cooking of goat and rabbit meat

Goat and rabbit meat: healthier alternatives to pork, beef and chicken

Dietary cholesterol explained

The role of fat in the diet?

MyPyramid *for kids* handout

MyPyramid *for kids* worksheet

**Publication/Presentation:**

Gager J. V.\*, C.L. Atkinson, O. Phelps, C. Chisley and A Howard, 2006. Assessing the Fatty Acid Profile and Dietary Fiber Content Of Oat Bran and Oatrim-Enhanced Beef Patties. P221, p296. IN: The 14th Biennial Association of Research Directors' Symposium, April 1-5 2006, Atlanta, Georgia.

C. L. Atkinson, J.V. Gager, O. Phelps, C. Chisley and A Howard, 2006. Assessing the Nutritional Profile of Flaxseed-Enhanced Meat Patties. P222, p296. IN: The 14th Biennial Association of Research Directors' Symposium, April 1-5 2006, Atlanta, Georgia.

**Outcome:** After instruction on MyPyramid *for kids*, approximately 90% of parents and children in grades 1-8 correctly identified the different food groups, correctly added the represented color for each food group, and correctly stated the types and benefits of food in each group. This knowledge will allow them to improve their food choices and lifestyle which may result in a low incidence of diet-related maladies such as, obesity, heart disease, cancer, diabetes and hypertension.

**Impact:** After instruction on MyPyramid *for kids*, approximately 90% of parents and children in grades 1-8 correctly identified the different food groups, correctly added the represented color for each food group, and correctly stated the types and benefits of food in each group. This is the first year of the project; more citizens will be contacted or reached as other activities are planned.

**Scope of Impact:** East Baton Rouge Parish, several parishes in the state of Louisiana and the south east region of the United States.

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana.

#### **4. New Technologies for the Utilization of Textile Materials**

The Objectives of the project were 1) to develop value added products from renewable and recyclable resources; and 2) to develop bioprocessing and related new technologies for textiles. To accomplish objective 1, a clear procedure for extraction and processing of kenaf fiber was developed based on valid data. The project has provided valuable information on yarn characteristics of kenaf. Kenaf grown on Southern University campus and at Mississippi State University was used. Fiber was extracted by bacterial and chemical retting. Yarns were spun from kenaf/cotton blends using ring and rotor spinning methods. Yarns were characterized using standard test methods of the American Association for Testing and Materials. Studies on extraction and processing of kenaf fibers have been conducted and procedures for producing very high quality fibers have been refined. A unique method of hand carding and combing was developed and utilized. Microscopic characterization of the kenaf fibers to determine the effects of retting method on the microscopic characteristics of the fibers has been done. Kenaf fibers that had been subjected to bacterial retting, softening with dilute NaOH, and chemical retting, were microscopically examined using various techniques including electron microscopy and polarized light microscopy.

Image analysis software was used to analyze photomicrographs of the fibers to determine fiber characteristics and to measure fiber parameters.

For objective 2, experiments to characterize digitally printed textiles and to develop optimal methods of improving the process were conducted. New affordable pre-treatments that can be applied in a small scale were developed and tested. Studies were conducted to determine optimum conditions for pre-treatment leading to the best color depth of digitally printed cotton fabrics. The study determined the effect of padder speed and roller pressure on the color of digitally printed cotton fabrics. Single layers of double-knit 100% cotton fabric were padded at speeds of 20, 40, and 60 rpm and pressure levels of 5, 15, 40, 60, and 70 psi using a 36" wide padder. The fabrics were printed using reactive dyes.

Information on the findings of this research was disseminated through publications in peer-reviewed papers and abstracts; presentation at scientific conferences; presentations in design showcases; presentation to business owners; publishing of newsletters and brochures for distribution to citizens through extension agents; and through the SU Ag Center website.

**Key Theme:** Textiles development and health care

**Output:** Based on the findings of this study, it can be concluded that NaOH improved fiber regularity of kenaf fibers but caused weakening of the fibers. Excessive chemical

treatment damages fiber bundle integrity, loosening short kenaf fibers, resulting in rougher yarn of fabric. Everglades variety has finer fibers and bundles and could be more suited for apparel applications. Studies indicated that digitally printed fabrics should be steamed for 30 minutes for optimum colorfastness. Specific procedures for steaming were developed. Results on pre-treatment indicated that the optimum conditions for padding were a roller pressure of 20 psi and roller speed of 40 rpm. In addition to gathering scientific data, the researchers have developed specifications for setting up a digital printing enterprise. This information will be used for outreach to clientele that may be interested in doing this kind of business.

One major output of this project was the publication of the first book on digital textile printing. Additionally, for FY 2006, the faculty and staff of this project made 39,557 contacts with clients through presentations in media, conferences, workshops, seminars, newspaper publications, and individuals.

**Publications/Presentations:**

Namwamba, G.W. and Dixon, D. L. (2006) The effect of roller speed and fabric layers during padding on shade depth of digitally printed cotton fabrics. Paper published in proceedings of 2006 ARD Conference.

Namwamba, G.W. and Dixon, D. L. (2006) Integrating 3-D Body Scanning, Digital Textile Printing and Other Digital Technologies for Mass Customization. Abstract published in proceedings of 2006 ARD Conference.

Namwamba, G. W. (2005) Digital Textile Printing. Charleston, SC: BookSurge Publishing. Namwamba, G. N. (2005) Apparel Quality Indicators: Perceptions of Male and Female Shoppers. Paper published in proceedings of 2005 ARD/AED Conference.

Namwamba, G. W. (2005) Advances in Curriculum Development and Delivery. Invited presentation at the 2005 USDA Project Director/SERD Conference.

Namwamba, G.W., Dixon, D.L. (2004). Microscopic Characterization of Bacterially and Chemically Retted Kenaf Fibers. Abstract published in proceedings of 2004 AATCC International Conference.

Dixon, D.L. and Namwamba, G.W. (2004) Effect of Steaming and Distance from Steaming Source on Color Intensity of Digitally Printed Cotton Fabric. Abstract published in proceedings of 2004 AATCC International Conference.

Namwamba, G., Dixon, D., Ghebreyessus, Y., Chen, Y., Zhang, T., and Kimmel L. (2003) Effect of retting method on the color of kenaf fiber. Published on the AATCC International Conference website.

Namwamba, G., Dixon, D. (2003) Bacterial retting and fiber softening of everglades variety kenaf for apparel applications. Published in proceedings of 13th Biennial ARD Conference.

Zhang, T., Chen, Y., Namwamba, G., Dixon, D., and Kimmel L. (2002) *Chemical Treatment for Improving Kenaf Spinnability* (Abstract), American Association of Textile Chemists and Colorist Review, October 2002.

Namwamba, G.W. and Dixon, D. L. (2003) Colorfastness to Crocking and Laundering of Digitally Printed Cotton Fabric. Paper published in proceedings of 2002 Beltwide Cotton Conference.

Namwamba, G., Scott, P., Dixon, D., Jackson, B. (2003) Summer Splash: African inspired outfit made with digitally printed fabric, an original design. Design exhibited in live gallery show at 2003 International Textiles and Apparel Association Conference.

Namwamba, G., Scott, P., Dixon, D., Jackson, B. (2003) Summer Splash: African inspired outfit made with digitally printed fabric, an original design. Design abstract published in proceedings of 2003 International Textiles and Apparel Association Conference. Namwamba, G.W., Dixon, D.L. (2003) Effect of Steaming and Washing on Shrinkage of Inkjet Printed Cotton Fabric. Abstract published on-line at [www.aatcc.org](http://www.aatcc.org). In proceedings of 2003 AATCC International Conference.

Namwamba, G. N. and Dixon, D. L. (2003) Change of color intensity of digitally printed cotton fabrics due to steaming. Published in proceedings of 13<sup>th</sup> Biennial ARD Conference.

#### **Bulletins, reports, circulars, pamphlets, fact sheets**

Textiles and Apparel Newsletter: Know your Fabrics. Natural and Man-made fibers.

Textiles and Apparel Newsletter: Know your Fabrics. Recycling Your Clothing.

Textiles and Apparel Newsletter: Know your Fabrics. Caring for Your Clothing.  
Digital Textile Printing: A Quick Guide.

**Outcome:** New affordable pre-treatments that can be applied in a small scale were developed and tested. Because of increased interest and expansion of the digital printing industry, the research information yielded has a major impact on the scientific community. This information will be used for outreach to clientele who may be interested in conducting a digital printing business. The products resulting from kenaf have unique aesthetic properties that closely resemble the more expensive linen and that appeal to many consumers that are interested in “natural-looking” fabrics.

Because kenaf has to be blended with a high percentage of cotton (at least 50 percent), increased use of this fiber will expand the uses of cotton, which is an important crop in Louisiana. The products resulting from kenaf have unique aesthetic properties that closely resemble the more expensive linen and that appeal to many consumers that are interested in “natural-looking” fabrics. The project has contributed the following new information to the enhancement of the textile industry:

- Procedure for extracting high quality kenaf fibers



- New information on the microscopic characteristics of kenaf fiber
- Research-based methods for pre-treating fabrics for digital textile printing
- Research-based methods for processing digitally printed fabrics
- Development of a full set of procedures for digital textile printing that can be used by individuals and small businesses

**Impact:** This project was used as leverage for a successful grant of about \$128,271 from the Louisiana board of Regents Support Fund. One group that will be impacted by this research is small business. Individuals can use results of the research and small businesses to set up and operate enterprises that produce customized digitally printed products. Digital textile printing has great potential to revolutionize coloration of textile products. In traditional printing, the development cost for strike-offs and samples are \$4,000 to \$8,000 per design and takes 2-5 weeks. Digital printing eliminates these monetary and time costs. The findings indicate that digital printing has a great potential of increasing the profitability of textile products. This may translate into cheaper, better quality and more affordable products for consumers. Digital printing permits unlimited colors to be printed, unlimited repeat sizes and print quality that could be impossible on traditional rotary machines. It also eliminates the necessity of engraving costly nickel screens and allows for a clean processing environment. The process opens new ways of applying surface designs to a fabric and reduces production time for textile prints. The research being conducted will provide information that will be useful in characterization of digitally printed textiles and to develop optimal methods of improving the process. Environmental compatibility is a major selling point for many products.

**Scope of Impact:** This technology is gaining prominence. Recently, the wife of the Governor of Iowa was featured in a major paper in Iowa for wearing a customized digitally printed gown to the Inaugural Ball at the White House. The gown was designed, printed and made by two Iowa State University professors conducting digital textile printing research.

This project is a multi-state project and the results have been shared with the following institutions:

- Southern University Agricultural Research and Extension Center
- Mississippi State University
- Louisiana State University
- University of Nebraska
- University of Kentucky
- Kansas State University
- Purdue University
- University of Wisconsin-Madison
- Auburn University
- University of Tennessee - Knoxville
- University of Arkansas – Fayetteville
- Colorado State University, Fort Collins, CO
- University of Georgia, Athens, GA

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana

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## **EXTENSION PROGRAMS**

The following educational programs were conducted to address National Goal 3:

1. Health Risk Factor Reduction
2. Nurse Managed Family Health Care
3. Healthy Community Advisory Councils
4. Expanded Food and Nutrition Education Program
5. Sisters Together; Move More, Eat Better

The citizens of Louisiana are becoming more concerned about the nutritional value, quality, safety of their diets, and affordability of food. The consumer's knowledge level about the relationship of food, diet, nutrition, fitness, and disease is vital to maintaining a healthy society. According to the Center for Disease Control (CDC) and a recent research published in the Journal of American Medical Association (JAMA), the leading causes of death in the U.S. in 2000 were tobacco (435,000 deaths; 18.1 percent of total U.S. deaths), poor diet and physical inactivity (400,000 deaths; 16.6 percent), and alcohol consumption (85,000 deaths; 3.5 percent). The 2003 Louisiana Health Report Card (p.41) reports that "Of the total of 41,495 deaths among Louisiana residents in 2001, the leading causes were: diseases of the heart; malignant neoplasms (cancer); cerebrovascular disease (stroke); accidents; and chronic lower respiratory diseases". Sixty-five percent of all deaths in Louisiana in 2001 were attributable to these five causes. The same report also states that "Although the last two decades have seen a dramatic downward trend in diseases of the heart, these conditions are Louisiana's number one cause of death". Over the last decade (1991-2001), the percent of overweight and/or obese Louisiana residents increased from 49 percent to 60 percent. Obesity is a health risk factor that has been observed to affect the health status of low income and minority populations.

### **1. Health Risk Factor Reduction**

An individual's health and future health can be changed by controlling certain health risk factors. The removal of even one factor may reduce the threat of several diseases. The following are considered health risk factors that can be controlled:

- i. **Physical Inactivity:** An active lifestyle prevents heart problems and other diseases
- ii. **Obesity:** Excessive weight puts a strain on the heart and circulatory systems.
- iii. **High blood pressure:** This condition is the major cause of heart and circulatory problems.
- iv. **Smoking:** This habit causes problems in the circulatory and respiratory systems.

- v. **Stress:** Negative stress and tension places a strain on the heart and circulatory systems.
- vi. **High cholesterol:** Fatty materials are directly related to cardiovascular problems.

**Key Theme:** Health Education

**Output :** From October 2005 – September 2006 eleven seminars/activities, eight health education displays (health fairs), and six issues (September/October, November/December, January/February, March/April, May/June, and July/August 2006) of “*Healthy Prescriptions*” newsletter were used as mediums to reach people in the state of Louisiana. The newsletters were circulated throughout the state of Louisiana with a total of 1,500 copies of each issue being printed.

Eleven seminars/workshops and seven health fairs were conducted for almost 3,000 participants. Topics covered were preventing the spread of HIV/AIDS and hepatitis awareness/stigma training, the health effects of stress, obesity, environmental health literacy, and being heart healthy. Various church and local community organizations collaborated in conducting these programs including American Heart Association, Aspirations, Mount Pilgrim Baptist Church, Baranco-Clark YMCA, Evangeline and St. Landry Parishes. Six issues (September/October, November/December, January/February, March/April, May/June, and July/August) of *Healthy Prescriptions Newsletter* were used as mediums to reach people in the state. Nine thousand copies (1,500 copies for each issue) of *Healthy Prescriptions Newsletters* were circulated throughout the state. Some of the topics covered in the newsletters were Coping with Holidays after the Hurricanes, Facts about Blood, Understanding Colorectal Cancer, Keeping Your Home Safe, and Summer Safety.

**Outcome:** A survey of respondents indicated that they benefited from nutrition classes, health fairs, fitness workshops, food safety demonstrations, and other activities conducted by the Center. The respondents further stated that these activities helped them improve dietary habits, reduce health risk factors, and enabled them to carry out physical exercise practices.

**Impact:** Results from new epidemiology studies are being reported every day. They show that if people take charge of their lifestyles, together with help and advice from their health professionals, they may expect to have a period of good health for a long time. A survey of participants in SU Ag Center activities indicated that 50 percent met and/or exceeded their goal of a healthy weight. Additionally, families are adding more fruit and vegetables to their diets, using less salt and less fast foods. Hurricanes Katrina and Rita evacuees benefited from this program to enable them to reduce stress, obesity and other health related factors. The existence of risk factors for a large number of diseases has led to a surge of interest in improving one’s lifestyle in order to head off ill-health. Knowing the health risks factors associated with specific health problems can alert people to steps to take to reduce these risks.

**Scope of Impact:** State and Regional

**Funding Source(s):** Smith-Lever Act, Section 1444 and supporting funds from the State of Louisiana

## **2. Nurse Managed Family Health Care** (Collaborative partnership with Southern University School of Nursing)

The obstacles faced by underserved, vulnerable populations are vastly different because they face a unique combination of factors that create disparities in health care. Economic factors, cultural and social differences, educational shortcomings, and the sheer isolation of living at or below the poverty level has impeded them in their struggle to lead a normal, healthy life. According to the *National Healthcare Disparities Report (NHDR): Summary* February 2004, while disparities in health care potentially affect all Americans and individuals from any group, they are not uniformly distributed across populations. For example, rural populations are clearly at risk of having a lack of access to health care and receiving poorer quality care. Examples as cited from the *NHDR*:

- Minorities are more likely to be diagnosed with late-stage breast cancer and colorectal cancer compared to whites.
- Patients of lower socioeconomic position are less likely to receive recommended diabetic services and more likely to be hospitalized for diabetes and its complications.
- Blacks and poorer patients have higher rates of avoidable hospital admissions (i.e., hospitalizations for health conditions that, in the presence of comprehensive primary care, rarely require hospitalization).

The objectives of this project were: to improve accessibility of primary health care services to underserved, vulnerable populations; and to promote health and disease prevention for women of childbearing age, infants, children, and adolescents in urban and rural medically underserved communities. Through collaborations with the SUAREC Cooperative Extension Program, community agencies, and both public/private health professionals from a wide range of settings, mobile outreach services are provided to outlying rural parishes and inner city Baton Rouge to address local community health needs. Emphasis is placed on health promotion, disease prevention, and early detection of health problems.

Specific strategies utilized in this project were designed to extend primary health care services to vulnerable populations that have been identified as “hard to reach” through traditional means. This population has little or no contact with the health system, and/or lives relatively far from medical providers. The SUSON Nurse Managed Family Health Care Center which includes the *Mobile Health Unit* (The Jag Mobile), through a collaborative practice, interdisciplinary model that utilizes the expertise from the SUAREC Cooperative Extension Program, makes accessible the provision of culturally and ethically sensitive primary health care programs for vulnerable populations. In addition to community outreach to identify mothers and children in need of health services, the mobile unit provides primary health care services at user-friendly places and

times. Referral and follow-up systems provide for continuity of care in addition to assisting families in accessing services beyond the scope of care of the project.

**Key Theme:** Health accessibility and education

**Output :** Implementation of this collaborative, interdisciplinary model is accomplished through a nurse managed health center that provides direct access to health care services (nursing, medicine, health education, and nutrition) by graduate prepared nursing faculty, nursing students enrolled in the RN program, registered nurses enrolled in the masters level Nurse Practitioner program, collaborating physicians, health education specialist, as well as nutrition faculty and students. The fully equipped stationary clinic located in the Southern University School of Nursing and a mobile unit (The Jag Mobile) is used by faculty and students to assist vulnerable populations. Community-based mobile outreach services covered the East Baton Rouge (EBR) Parish and surrounding rural parishes within a 50 mile radius. The clinics offered: 1) primary health care to women and children; 2) KidMed program, including Early Periodic Screening, Diagnosis, and Treatment (EPSDT); 3) Medicaid Enrollment assistance; and 4) Women, Infant, and Children (WIC) program, a supplemental nutrition program for women, infant and children, providing nutritional counseling for prenatal, postpartum and breastfeeding women, to ensure healthy pregnancy outcomes and provide optimal nutrition and health for their babies.

A total of 3,965 WIC clients were served in the clinic from October 2005 to September 2006. Relevant topics from the Healthy Prescriptions Newsletter were used to assist with health teaching for the following topics: childhood immunizations, safety, dental health, nutrition, etc. Thirty- nine KidMed participants have been served by the Family Health Care program from October 2005 to September 2006. Of the 39 participants, 36 received medical screenings, 29 received vision screenings, another 29 received hearing screenings, as well as 25 immunizations administered. The KidMed participants ranged in age from birth to 21 years and were referred by a contracted primary care physician. The following components of the KidMed Health Screenings were also administered by nurses through the Family Health Care Center and the SUAREC Health Education Program specialist: 1) complete health and developmental history; 2) comprehensive unclothed physical examination or assessment; 3) age-appropriate immunizations; 4) laboratory tests (including appropriate neonatal, iron deficiency anemia, urine, and blood lead screening); and 5) health education.

The *Mobile Health Unit* (Jag Mobile) had a total of 13 requests from October 2005-September 2006. The requests came from several churches, Alpha Kappa Alpha Sorority, Mary Bird Perkins Cancer Center, YMCA, and a catholic school. Services offered included: physical examinations, health screenings and vision screenings, blood pressure screening, hearing screening, height and weight measurements, and glucose screening. Health education was provided to participants by the Health Specialist to enhance their awareness of health promotion and disease prevention strategies, while increasing self-care capabilities. Areas of health teaching included nutrition, dental

health, aging, childhood immunizations, safety, breast self-examination, hypertension, and diabetes education, etc.

**Outcome:** The Nurse Managed Family Health Center partners with the SUAREC Cooperative Extension Program, and the College of Agricultural, Family and Consumer Sciences, Dietetic Internship program. Working with extension agents, the Nurse Managed Clinic staff meets with leaders in rural communities to discuss the purpose of the Mobile Health Unit and to receive feedback from the community. The goal is to address attitudes and fears associated with healthcare before the mobile unit arrives in the community. The Health Education Specialist of Cooperative Extension Program assisted in identifying and scheduling the specific dates, times, and locations for operation of the mobile health unit. The dissemination of information and follow-up is one of the roles that extension has played with this project. The extension program is uniquely positioned to work with communities on a broad array of agricultural and family issues including safety and environmental health, consumer health education, health literacy, and community planning. The extension agents deliver health education programs to assist and motivate individuals, families and communities to examine, improve, and maintain healthy lifestyle practices.

When surveyed, 100 percent of the recipients of the program indicated that their health knowledge and awareness were improved. They also indicated that they will use knowledge gained to improve the health conditions of their family members and friends.

**Impact:** Statistics show that 50 percent of American adults (90 million people) have difficulty understanding health information. For underserved and populations placed at risk, the proportion is even higher than 50 percent. Beneficiaries of the Family Health Program increased knowledge and awareness and also received treatment. Several studies indicate that poor health status is disproportionately high among patients with low functional health literacy. People with low functional health literacy are more likely to incur higher health care costs. Additionally, with escalating health care costs, and an average cost of \$80 - \$100 per primary care visit, the program saved citizens especially the underserved thousands of dollars in health and related care costs.

This project potentially impacts (through primary health care services) large numbers of individuals, groups, inner city and rural communities. On a national as well as state level, statistics continue to validate a persistent disparity in both morbidity and mortality rates between members of minority groups and their non-minority fellow citizens. Unfortunately, state as well as local statistics mirrors the problems at the national level. The percentage of African Americans in Louisiana is more than twice the national average. Health disparities are a challenge, as only 69.1 percent of African American women receive adequate care compared to 86.5 percent of their counterparts.

**Scope of Impact:** This project impacts large numbers of individuals, groups, inner city and rural communities in the State of Louisiana.

**Funding Source(s):** Smith-Lever Act, Section 1444 and supporting funds from the State of Louisiana

### 3. Healthy Community Advisory Councils

Traditionally, the relationship between health service providers and the public has been one of expert to client. However, the need for much greater participation in prioritizing, planning, and implementation of health services and programs is recognized as a cornerstone for health reform. The best interests of health restructuring are achieved by the broadest possible public input. As a result, a Healthy Community Advisory Council was established continued their meeting.

The councils provided a voice for volunteers, health care professionals, and community members to become directly involved in community health issues. Each council explored health needs and priorities in their communities and made recommendations to SUAREC on key health education programs.

**Output:** As a result of recommendations from the Lafayette Parish Health Initiatives Subcommittee (advisory council), childhood obesity was identified as a big problem in the community. Networking with Lafayette Park and Recreation, Lafayette Parish Boys and Girls Club, Youth Education Support, Inc. and Spring break Camp, participants were identified to focus on health through physical activities and making healthy food choices. Those activities involved swimming, jumping on the trampoline, ball playing, running, jumping rope, and dancing. Youth ages 6-11 were selected to participate along with their parents. A total of 161 children and 27 parents participated in the activities. The program included selecting and eating good healthy food choices at home and away from home.

**Outcome:** Childhood obesity was identified as a big problem in the community. Networking was developed and collaborations with local partners and stakeholders were forged to tackle the problem. Appropriate healthy activities were developed and implemented for the youth. Participants utilized information provided to better their health status. Both parents and children took part in the activities, thus enhancing the quick implementation of the program.

**Impact:** Of the 161 children participating in the program, within a few months 75 percent of the youths began to eat healthier, exercise more, and took part in more physical games than usual; also, less soft drinks and more water was consumed. Parents were encouraged to cook a variety of healthy food choices, provide more fruit for snacking, and let the children play outside to run, jump, and to burn those unwanted calories. Within a few short months a total of 1000 lbs were lost and a lot of self-esteem was gained.

**Scope of Impact:** In order for Healthy Community Advisory Councils to be successful, they have to develop positive working relationships and open lines of communications with the staff at SUAREC and with their community members. Advisory councils are one important mechanism for participation in our health system

**Funding Source(s):** Smith-Lever Act, Section 1444 and supporting funds from the State of Louisiana

#### **4. Expanded Food and Nutrition Education Program**

The Expanded Food and Nutrition Education Program (EFNEP) is a unique program that currently operates in all 50 states and in American Samoa, Guam, Micronesia, Northern Marianas, Puerto Rico, and the Virgin Islands. It is designed to assist limited-resource audiences in acquiring the knowledge, skills, attitudes, and changed behavior necessary for nutritionally sound diets, and to contribute to their personal development and the improvement of the total family diet and nutritional well-being.

The delivery of EFNEP youth programs takes on various forms. EFNEP provides nutrition education at schools as an enrichment of the curriculum, in after-school care programs and through 4-H EFNEP clubs, day camps, residential camps, community centers, neighborhood groups, and home gardening workshops. In addition to lessons on nutrition, food preparation, and food safety, youth topics may also include fitness, avoidance of substance abuse, and other health-related topics.

Parish Extension Agents and State staff provide on-the-job training and supervise paraprofessionals and volunteers who teach EFNEP. Paraprofessionals usually live in the communities where they work. They recruit families and receive referrals from neighborhood contacts and community agencies (such as Food Stamps and WIC). Methods for program delivery may include direct teaching in group or one-to-one situations; mailings and telephone teaching to complement other teaching methods; mass media efforts to develop understanding, awareness, and involvement in the educational program; and development and training of volunteers to assist with direct teaching of youth.

**Key Theme:** Youth nutrition education, food preparation, and food safety. Youth topics also include fitness, avoidance of substance abuse, and other health-related topics.

**Output:** Participants learned about the USDA's food guidance system, dietary guidelines and the importance of implementing some type of physical activity into their daily lifestyles. Each lesson is taught in a one hour format and includes nutrition education as well as an activity to reinforce the subject matter taught. Incentives are given that emphasize the lesson taught and also acts as a means of marketing the program. For the period, three Louisiana Parishes (Counties) were targeted and 800 youth participated.

**Publications:** Nutrition Nibbles Fact Cards

**Curriculum:** The USDA's Power of Choice  
Professor Popcorn, Purdue University

**Outcome:** Participants learned about the USDA's food guidance system, dietary guidelines and the importance of implementing some type of physical activity into their daily lifestyles. They also learned how to make their own healthy snacks and how to ensure that food safety guidelines are adhered to while doing so. Participants said they will incorporate lessons learned into their daily meal menus. They also indicated that they will definitely recommend the lessons to others.



**Impact:** The EFNEP program is in its first year of implementation, being offered in only three parishes, Avoyelles, Rapides and Evangeline. Initial data indicates that the program has been successful. Over 800 youth participated in the program during a five month period.

**Scope of Impact:** SUCEP in collaboration with the USDA's Food and Nutrition Service, the Louisiana State University Ag Center and the Food Bank of Central Louisiana. The program is in Avoyelles, Rapides and Evangeline parishes. It targets after school programs such as Kids Café, head starts and local community organizations.

**Sources of Funding:** Smith – Smith-Lever Act under Section 1444, USDA Food and Nutrition Service

## **5. Sisters Together; Move More, Eat Better**

Sisters Together is a program designed to encourage Black women to maintain a healthy weight by becoming more physically active and eating healthier foods. Sisters Together: Move More, Eat Better is a project of the National Institute of Diabetes and Digestive and Kidney Disease (NIDDK) of the National Institutes of Health (NIH) through the Weight-Control Information Network (WIN).

The Sisters Together pilot program was developed by WIN in partnership with the Boston Obesity/Nutrition Research Center, which included representatives from the New England Medical Center, the Harvard School of Public Health, and the Tufts University School of Nutrition Science and Policy, as well as community nutritionist, media specialist, and educator.

The program increases awareness about the importance of moving more and eating better. Activities included forming community walking groups, conducting supermarket tours, participating in a cable TV cooking show, developing a Sisters Together nutrition and fitness calendar, and supporting efforts to build a full-service supermarket in the Boston communities. The success of each activity is then measured.

Each phase of program planning is measured using focus groups, informal interviews, and small group discussions with Black women from local communities. Program messages, materials, and activities were tested to make sure they were culturally appropriate and met the program objectives.

Building on the premise of the original Sisters Together model, the Southern University Agricultural Research and Extension Center, began its own *Sisters Together: Move More, Eat Better* program. The mission of this program is to create a culturally sensitive program targeting weight maintenance and healthier lifestyles for the African American women of Louisiana.

**Key Theme:** Healthy Lifestyles through nutrition and physical activity education

**Output:** A curriculum was developed by SU Ag Center Nutrition Staff entitled “*Sisters Together; Move More, Eat Better*”. This curriculum is a nutrition and physical fitness curriculum designed to encourage African American women to maintain a healthy weight by becoming more physically active and eating healthier foods. “Sisters Together” is designed to assist individuals and community organizations to plan, promote, implement and evaluate their health awareness. Community partners throughout the state are being trained to administer the program through train-the-trainer workshops being held at locations throughout the state.

**Outcome:** The program was piloted in three Parishes (Counties), East Baton Rouge (urban), St. James (rural) and Madison (rural). Among the three parishes there were approximately 100 participants; 50 urban and 50 rural. As a result of the successfulness of the pilot program, the program is now being offered statewide. Train-the-trainer sessions are now being offered to community and faith based organizations statewide that wish to sponsor the program.

**Impact:** Train-the-trainer sessions have just begun; therefore the impact of the entire program cannot be assessed at this time. However, during the 6-month pilot phase of the program, there were success stories that ranged from weight loss to individuals being taken off medications for hypertension and diabetes.

**Scope of Impact:** Statewide, community partners throughout the state are being trained to administer the program through train-the-trainer workshops being held at locations throughout the state.

**Sources of Funding:** Louisiana State Department of Health and Hospitals and supporting funds from the Smith-Lever Act, Section 1444.

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## **National Goal 4: Greater harmony between agriculture and the environment**

### **RESEARCH PROJECTS**

Two projects were conducted as part of National Goal 4. They include:

1. Quantifying the Impacts of Biobased Plant Residues on Nutrient Management and Growth of Selected Urban Landscape Trees
2. A GIS-RS Supported NPS-Management Information system for Urban Agriculture

Research emphasis will continue in the area of natural resource management and the protection of urban forest health. SUAREC scientists are hoping to generate useful research information relating to natural resource management systems. Information generated will assist the public in better understanding the global problems that threaten the quality of air, water and soil resources.

## **1. Quantifying the Impacts of Biobased Plant Residues on Nutrient Management and Growth of Selected Urban Landscape Trees**

Mulching is an agricultural practice in which a layer of organic or inorganic materials are placed on the soil surface or mixed into the top few inches of soil. In the past, biobased organic mulches were used to produce ornamental, fruit, and forest. But with the advent of modern agrochemicals, this soil management system was largely displaced, except in some tropical areas where organic mulching represents an important alternative for improving soil fertility. Current concerns regarding the need to find methods to protect and conserve soils and the increased availability of organic residues from cities are renewing an interest in the use of organic mulches, both in the traditional application of crop residues, and in the use of composted and uncomposted urban wastes. This project tests the potential impact of biobased mulches on growth of selected landscape trees. In addition, this study quantifies the contribution of several mulches to the rhizosphere.

The objectives of this project are: 1) to determine the effect of selected biobased mulches chemical composition, N addition and particle length on the decay and N mineralization rates of available organic materials; 2) to determine the effects of several urban biobased mulches on the dynamics, growth and development (physiology, morphology, and anatomy) of selected landscape trees and their associated rhizosphere dynamics; 3) to determine the impact of several urban biobased plant residue mulches on carbon cycling and sequestration; and 4) to determine the effects of biobased mulch on root disease severity of selected landscape tree rhizosphere, microbial population dynamics, and saprophytic survival of selected soil borne plant pathogens.

A field project was established after recovery from the hurricane Katrina's impact. Two experimental sites in Baton Rouge, Louisiana were utilized to determine the effect of selected biobased mulches chemical composition, N addition and particle length on the decay and N mineralization rates of available organic materials. In addition, the effects of several urban biobased mulches on the dynamics, growth and development (physiology, morphology, and anatomy) of Nutall Oak trees (*Quercus nuttallii*) and their associated rhizosphere dynamics are being studied. The project is also determining the impact of several urban biobased plant residue mulches on carbon cycling and sequestration and potential root disease in Nutall Oak's rhizosphere, microbial population dynamics, and saprophytic survival of selected soil borne plant pathogens. Field and laboratory experiments are being addressed following plots establishment, planting and mulching applications. Plant physiology, microscopy, pathology and biomass laboratories were enhanced to handle necessary periodic sampling, testing and analysis. Regression models are being developed to characterize decomposition rates of selected biobased mulches. Collaborative efforts with the USDA-FS and the USDA-NRCS National Plant Data Center are underway to strengthen the dissemination of technical results.

**Key Theme:** Biological adaptation, mulching, soil fertility, soil conservation

**Output:** More than 1200 professionals and 500 homeowners have been reached through direct and indirect outreach activities. In addition, more than 3000 individuals have been reached through national and regional meetings and conferences. Information gathered from the research is shared with extension staff and with producers through workshops, conferences, special publications and other handouts. For instance, after the devastating effects of hurricanes Katrina and Rita, two workshops titled “Making New Orleans Green Again” were organized in two locations – Baton Rouge and New Orleans with a total of 10 presentations, 46 individuals attended the sessions. Another workshop, Hazard Tree Assessment and Management Training Workshop was conducted with 104 persons in attendance.

**Publication/Presentation:**

**Book:**

Guidry, M. M., Z. H. Ning, and K. K. Abdollahi. 2006. *Managing Urban Trees Before Storms*. A book published in collaboration with USDA Forest Service. ISBN 1-930129-17-3

**Refereed Articles:**

Abdollahi, K. K. and Z. H. Ning, 2006. Assessing the health of live oaks (*Quercus virginiana*) in the Gulf Coast region using canopy and leaf analysis. *The Journal of Scanning Microscopy*. 28(2):128-129

Ning, Z. and K. Abdollahi 2006. Urban Forests after Hurricane Katrina: Damage Assessment and Restoration. *In Proceedings of the Society of American Foresters 2006 National Convention*.

Harmon, A. Ning, Z. and K. Abdollahi 2006. Organic Mulch and Its Application in Urban Landscapes. *In Proceedings of the Society of American Foresters 2006 National Convention*.

Ning Z. and K. Abdollahi 2005. Organic Mulch and Its Effects on Live Oaks and Urban Soil. *Microscopy and Microanalysis* 11(2):1146-47.

Ning, Z. 2005. Urban Forests-the Devastated Gulf Coast. 10(1):3-5. *Communities and Forests*.

Ning, Z. and K. Abdollahi, 2005 Organic Mulch and Its Effects on Live Oaks and Urban Soil. *Microscopy and Microanalysis* 11(2):1146-47.

**Abstracts:**

McBride, J. Z. H. Ning et. al. People and Nature: Changes to Community Forests. *In Proceedings of the Society of American Foresters 2006 National Convention*.

Ning, Z., K. Abdollahi, D. Collins, and A. Johnson. 2006 Southern University AgCenter scientists assist minority communities and small businesses in urban wood wastes utilization. ARD 14<sup>th</sup> Biennial Research Symposium, p287. April 1-5, Atlanta, GA

Ning, Z., K. Abdollahi, and O. Bandele. 2006 Tissue culture at Southern University Agriculture research and Extension Center. ARD 14<sup>th</sup> Biennial Research Symposium, p287. April 1-5, Atlanta, GA

Ning, Z. and Chris White. 2006 Urban forests and its sustainability. ARD 14<sup>th</sup> Biennial Research Symposium, p286. April 1-5, Atlanta, GA

Ning, Z., K. Abdollahi, E.E. Turner, T. Doyle, and T. Coleman, 2006 Impacts of Gulf Coast regional climate change on society. ARD 14<sup>th</sup> Biennial Research Symposium, p134. April 1-5, Atlanta, GA

Ning, Z. 2006. Urban and rural linkage through forestry. Abstracts of the International Conference on the Role of Forestry in Rural Development and Environmental Sustainability, April 19-21, Beijing, China

Abdollahi, K.K., Z. Ning, and D. Collins. 2006. Urban forest ecosystem assessment for Gulf Port, Mississippi prior to hurricane Katrina landfall. ARD 14<sup>th</sup> Biennial Research Symposium, p93. April 1-5, Atlanta, GA

Johnson, A. 2006 Carbon loss data from urban wood wastes. Abstract in ARD 14<sup>th</sup> Biennial Research Symposium p. 285

### **Educational Extension Publication**

Ning, Z. H. 2006 Risk Assessment and Management Workshop Trains Communities on Tree related Hazard Prevention During Hurricane Season. USDA Forest Service Southern Region 3(1):2-3, Ref:1700-1690-3

Ning, Z. K. Abdollahi, D. Collins, and A. Johnson. 2005 Assist Minority Communities and Small Businesses in Urban Wood Waste Utilization. Submitted to the USDA Forest Service Region 8 for publication

Ning, Z. 2006. Assessing Gulf Coast Regional climate change and its impacts on society. Southern University AgCenter website (link: Hurricane Center).

Tarver, G. and Z. H. Ning 2005. Composting urban waste wood for home garden use. Urban Forestry, Natural Resources, and Environment Vol 2 No.501 Southern University Agricultural Research and Extension Center, Baton Rouge, Louisiana.

### **Presentations:**

Ning, Z. H. 2006. Urban forests restoration in the Gulf Coast region. At Engineering the Vision for a Greater Louisiana Conference, Baton Rouge, LA

Abdollahi, K. K. "Tree Assessment Before and After Storms" (in the) Hazard Tree Assessment and Management Training Workshop. June 27, 2006. SU Ag Center, Baton Rouge, Louisiana.

Collins, D. "Urban Forest Health Management to Prevent Hazard" (in the) Hazard Tree Assessment and Management Training Workshop. June 27, 2006. SU Ag Center, Baton Rouge, Louisiana.

Johnson, A. "Tree Condition Evaluation" (in the) Hazard Tree Assessment and Management Training Workshop. June 27, 2006. SU Ag Center, Baton Rouge, Louisiana.

Ning, Z. "Know Your Trees and Urban Forests" (in the) Hazard Tree Assessment and Management Training Workshop. June 27, 2006. SU Ag Center, Baton Rouge, Louisiana.

Ning, Z. and Brent Beamon 2005. Urban forest management: healthy forests for healthy communities. At the Society of American Foresters (SAF) 2005 National Convention, Fort Worth, TX

Abdollahi, K and Ning, Z. 2005. Gulf coast community urban forest assessment. At the Society of American Foresters (SAF) 2005 National Convention, Fort Worth, TX

Ning, Z. 2005. Marketing pine straw as mulch in urban area. At Branding and Marketing Community Based Forestry Products Workshop, St. Helena Island, NC.

Ning, Z. H. Multicultural approached in urban greening and community beautification. At the 2005 Annual Diversity Conference, Baton Rouge, LA (national)

Abdollahi, K.K. "Landscape Workshop: Greening New Orleans after Katrina". Nov 2005. SU Ag Center, Baton Rouge, Louisiana.

Abdollahi, K.K. "Landscape Workshop: Greening New Orleans after Katrina". Dec 2005. Marriott Hotel, New Orleans.

Johnson, A. 2005. Utilizing wood wastes from urban trees. At Making New Orleans Green Again Workshop, Dec. 6, New Orleans.

Johnson, A. 2005 Economical benefits of utilizing wood wastes. At Making New Orleans Green Again Workshop, Dec. 6, New Orleans, Louisiana.

Johnson, A. 2005 Carbon loss data from urban wood wastes. At Making New Orleans Green Again Workshop, Dec. 1, Baton Rouge, Louisiana.

Ning, Z. 2005. Marketing pine straw as mulch in urban area. At Branding and Marketing Community Based Forestry Products Workshop, St. Helena Island, NC.

Sankella, N. 2005. Wood waste as an alternative fuel. At Southern University graduate students seminar. Baton Rouge, Louisiana.

**Outcome:** The experiences of the recent hurricanes Katrina and Rita, their aftermath and devastating impact on the Gulf Coast and especially the New Orleans area make this project timely, relevant and necessary. Utilization of urban wood waste and biobased plant residue would have several major impacts such as: expanding and extending the life of the wood fiber supply; contributing to carbon storage, thereby reducing greenhouse gases; reducing the amount of recoverable wood going to landfills; and stimulating new technologies and market to utilize recoverable wood fibers. In general, the 'Urban forest' offers opportunities for wood waste, biobased plant residue, niche business. In the post Katrina environment, many Gulf Coastal communities are utilizing wood waste and urban plant residues as economically feasible and readily available source of soil amendments. Through collaborative efforts with the Gulf Coast Cooperative Ecosystem Studies Unit (GC-CESU) and non-profit organizations we are impacting the restoration efforts in Louisiana, Mississippi and other neighboring states. Collaboration with the private sector such as Nature's Best, Inc. and other arboricultural companies has promoted the utilization of wood waste, especially, the urban wood waste in Louisiana. The last assessment indicated that more than 65% of the homeowners and 85% of the businesses in Louisiana are utilizing some sources of biobased plant residue as mulching materials in their landscaping projects.

After the devastating effects of hurricanes Katrina and Rita, two workshops titled "Making New Orleans Green Again" were organized in two locations – Baton Rouge and New Orleans with a total of 10 presentations. The results of a survey conducted at the workshops indicated the following:

- 87 percent said the workshop highlighted the problems faced by lawn care and landscaping service providers;
- 78 percent said the workshop identified problems confronting the small landscape and lawn care business persons;
- 70 percent said the workshop provided important remedies to their business problems;
- 85 percent said they received information on how to obtain and restore permits for small landscape and lawn care business owners;
- 89 percent said knowledge and skills gained at the workshop will be useful to them and/or their businesses; and
- 85 percent said the workshop answered important questions they had about making New Orleans green again.

**Impact:** There are indications that the participants in the workshops and training are implementing the recommendations. Additionally, two masters degree thesis are being developed by urban forestry graduate students. The results obtained from this study will contribute to the knowledge of urban wood waste utilization and mulch management. This knowledge will allow more efficient and economic use of urban wood wastes by way of organic mulches. Also, the result of this project has the potential of reducing the costs of caring for trees in urban areas and improving the quality of the environment. A

website that will provide information to the public for addressing their needs is currently under construction.

**Scope of Impact:** Local, state, national, and possibly international. The Natural Resources Recovery, Inc (NRRI) is collaborating on this project to promote the utilization of compost and organic materials in Louisiana, Southeast Region and the Nation.

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana

## **2. A GIS-RS Supported NPS-Management Information System for Urban Agriculture**

The objectives of this study were to a) identify factors that influence nonpoint source pollution arising from urban agriculture in Louisiana; b) investigate the spatial relation between agricultural landcover and nonpoint source pollution; c) design a spatial decision-making model relating the impact of urban agriculture to water quality in urban agriculture in Louisiana, and d) disseminate the findings as nonpoint-source Education for Urban Agriculture.

Sources of non-point pollution in East Baton Rouge Parish (EBR) and nearby urban areas were identified. Of the identified sources of non-point source pollution, those related to urban agriculture were identified and documented. Base maps of the area pertinent to the research collated, have been saved in GIS data warehouse. New maps were digitized from hardcopy to GIS format. Three graduate students completed thesis research relating to this project. Material pertinent to urban agriculture's effects on non-point source pollution have been documented, evaluated, analyzed and implemented as an information system.

The Rural-Urban agro-ecosystem is a biological and natural resource system that is managed jointly by rural and urban people to provide services to the environment. This agro-ecosystem generates direct and indirect business and health benefits to society, and contributes recreation and leisure outlets for an urbanizing society. Rural-urban agro-ecosystems approach can help evaluate the impact whole agriculture system in the context of urbanization and non-point source pollution. Adverse impacts on water pollution have led to efforts to address the Total Maximum Daily Load (TMDL) issue in Louisiana. This project utilized already existing databases to integrate GIS into water quality assessment to evaluate nonpoint source pollution due to urban agriculture in Louisiana. The research conducted at the Southern University Research and Extension Center (SUAREC) has contributed to ongoing mitigation of non-point source pollution and is providing new research-based information that was previously not available.

Research information is being disseminated through publication of informational brochures, booklets, and handbooks; meetings with agricultural extension agents to discuss the goals of the research and to gain access to stakeholders; meetings with local



community environmental and urban forestry action groups; and participation at the HBCU Water Quality Conference to network and liaise with other universities.

**Key Theme:** Safe agriculture, urban area, and the environment

**Output:** Sources of non-point pollution in East Baton Rouge Parish (EBR) and nearby urban areas were identified. Of the identified sources of non-point source pollution, those related to urban agriculture were identified and documented. Base maps of the area pertinent to the research were collated. New maps were digitized from hardcopy to GIS format. Information from the project was disseminated to citizens and stakeholders for immediate and remote applications. After hurricanes Katrina and Rita, workshops titled “Making New Orleans Green Again” and “Hazard Tree Assessment and Management Training” were conducted to assist citizens in their rebuilding efforts in New Orleans and other affected areas. Over 146 persons attended both workshops. Other outputs of the project include:

- Development of a hydrology/GIS research website in urban forestry.
- Development of a display of computer based model from our research.
- Publication of informational brochures, booklets, and handbooks.
- Hands-on workshops at SUAREC.
- Publication of research materials.
- Presentations/ Demonstration/discussions with stakeholders
- Demonstration of Internet Based GIS Data warehouse.
- One-on-one technical assistance.
- Development of Trimble GPS Application Manual

**Publication/Presentation:**

Namwamba, F. "Geographic Information System (GIS) Application in Tree Survey and Inventory" (in the) Hazard Tree Assessment and Management Training Workshop. June 27, 2006. SU Ag Center, Baton Rouge, Louisiana.

Namwamba, Fulbert, L.\* and Thomas Legiandenyi. Interactive GPS and Spatial Technology Applications for Urban Tree Inventories. 14th Biennial Association of Research Directors' Symposium. Atlanta, Georgia. April 1-5 2006

Namwamba, Fulbert, L.\* and Thomas N. Legiandenyi. Urban Agriculture Impact on Nonpoint Source Pollution. 14th Biennial Association of Research Directors' Symposium. Atlanta, Georgia. April 1-5 2006

Namwamba, Fulbert, L.\*, Jerome Bennett, and Jason Prewitt. Green Infrastructure Evaluation of the East Baton Rouge Rural Urban Interface. 14th Biennial Association of Research Directors' Symposium. Atlanta, Georgia. April 1-5 2006

Namwamba, Fulbert, L.\*, and Okabagaber Teweldemedhin. Simulation Model for Natural Resources Management Using an Integrated Geographic Information System and

Visual Basic Application. 14th Biennial Association of Research Directors' Symposium. Atlanta, Georgia. April 1-5 2006

**Master Thesis:**

Legiandenyi, Thomas Nyatta. July, 2006. Impact of Urban Agriculture on Urban Nonpoint Source Pollution .

Preuett, Jason. December, 2006. Development of Urban Forest Planning Database for the Proposed City of Central, Louisiana.

Namwamba, F., Abdollahi, K., Wells, A. R., and Lyles, L. 2004. Urban Forest Management Using GIS/Remote Sensing: Management Plan for Burden Center. In Ning and Abdollahi (Eds): Urban and Community Forestry: Working Together to Facilitate Change. Moran Printing. Baton Rouge, LA.

Namwamba, F., Abdollahi, K., Namwamba, J. B., and Lyles, L. 2004. GIS and GPS-Based Urban Forest Statistics for Urban Forestry Ecosystem Analysis. In Ning and Abdollahi (Editors): Urban and Community Forestry: Working Together to Facilitate Change. Moran Printing. Baton Rouge, LA.

**Outcome:** The research conducted is adding, collating and documenting knowledge sources of non-point source pollution in East Baton Rouge Parish. The workshops conducted for hurricanes Katrina and Rita evacuees were well received: 86 percent of the participants indicated that knowledge and skills gained at the workshops will be useful to them and/or their businesses. The project has provided vital information to agricultural producers and the parish (county) government in their effort to minimize pollution. There is a renewed interest in the use of GIS to assess non-point source pollution.

**Impact:** Identification and documentation of agriculture related sources of non-point pollution in EBR and surrounding urban areas is a major step in the process of delineating sources of health hazards in the community. The study is providing vital information to agricultural producers and the parish government in their effort to minimize pollution. This project was used as leverage for a competitive research equipment grant titled "I-TEST Mission to Planet Earth" funded by the National Science Foundation (NSF) in the amount of \$1.5 million. The funds from this new NSF project have been used to train Louisiana middle school teachers in GIS applications in agriculture. Two graduate students gained professional experience in GIS while working on the project. The principal investigator was nominated to serve on two statewide commissions: the Louisiana Groundwater Commission and the Louisiana Groundwater Task Force. Two graduate students gained professional experience in GIS and completed their masters degree thesis while working on the project.

**Scope of Impact:** The results of this study are beneficial to producers and parish governments throughout the state.

**Funding Source(s):** Evans-Allen (USDA/CSREES) and matching funds from the State of Louisiana

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## **EXTENSION PROGRAMS**

The following program (in conjunction with programs in Goal 1) was conducted to address Goals 4:

Sustainable Agriculture

### **1. Sustainable Agriculture**

Through outreach, education, field days, and workshops agricultural producers have gained a greater understanding of the concept of sustainable agriculture. While no new specific programs have been implemented to address this issue, agents and specialist began to incorporate sustainable agricultural ideologies into the majority of their conversations with the clientele. Also, research faculty and staff especially the organic production personnel conducted several field days and workshops during the year. Primary focus has been through efforts designed to reduce the use of pesticides, and on cultural management strategies, land management and resource management. SUAREC faculty and staff partner with the various USDA agencies, especially Natural Resources Conservation Service (NRCS) to provide the forum for discussions on the various conservation programs available. Additionally, on farm sustainability is explored by methods to include, but not be limited to, the use of farmer's markets, road side market stands and on-farm market outlets.

**Output :** Under the auspices of this program, SU Ag Center received a grant under the Initiative for Future Agriculture and Food Systems (IFAS) Project. Five Organic Production Certification workshops were conducted by personnel of the Center at different locations with 119 producers from Louisiana, South Carolina, Alabama, and Georgia in attendance. Two sustainable field days were organized with over 140 producers participating; seven pastured poultry meetings were held for 233 participants; and 20 sustainable meetings for fruit and vegetable producers were organized in various parishes for 496 participants. In addition, several media presentations in sustainable agricultural production were carried out. Some of the issues discussed were; Organic Gardening, Producing and Marketing Organic Produce, Pasture Poultry Production and Marketing, Rearing Broilers on Pasture, Organic Production Certification, Producer-friendly Environment, Sustainable Irrigation, and Square-Foot Gardening, etc. In Simmesport, Louisiana the SU Ag Center's personnel is actively assisting a private firm – Magna ("Canadaville") Project to establish an organic farm that is catering for hurricane evacuees. Technical assistance is being provided in the following areas: organic vegetable, swine and poultry production; assessment of equipment and building needs; agricultural training of evacuees; and establishment of community gardens.

Five meetings on Farmer's market operation, management, sales attended by 150 producers were also conducted. Four meetings - Earth Day workshop were attended by 550 clients. Additionally, about 5,725 individual contacts were made through home, farm

and individual visits and nearly 7,000 published materials such as newsletters, research highlights, and other special publications were distributed.

**Outcome:** Producers have implemented or are seriously considering incorporating segments of the sustainable agriculture techniques into their enterprises. Approximately 90 percent of participants in the workshops and field days said they gained new knowledge and skills and that the activities broadened their understanding of sustainable agriculture. The program assisted two Louisiana growers with organic certification costs. Three additional producers in Louisiana who will receive assistance with certification have been identified. Additionally, 10 producers completed organic certification applications in Savannah, Georgia and 16 producers completed similar applications in Columbia, South Carolina

**Impact:** Four thousand agricultural producers with an interest in agricultural production have increased their knowledge on sustainable agriculture and are more familiar with the various conservations programs, practices, laws and regulations. The program assisted two Louisiana growers with organic certification costs. Three additional producers in Louisiana who will receive assistance with certification have been identified. The Magna (“Canadaville”) Project in Simmesport, Louisiana has 1,000 acres which is training some New Orleans (hurricane) evacuees in producing organic vegetable, swine and poultry. In addition, the SU Ag Center personnel is part of a pioneer effort of a new initiative coming from the SAWG Meeting to establish the Southern African-American Farmers Organic Network.

**Scope of Impact:** SUAREC collaborates with the Louisiana Department of Agriculture, USDA/NRCS, LSU Ag Center, and other state and federal agencies dealing with natural resources and environmental issues in the delivery of educational programs.

**Funding Source(s):** Smith-Lever Act, Section 1444 and supporting funds from the State of Louisiana

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## **National Goal 5: Enhanced economic opportunity and quality of life for Americans**

### **RESEARCH PROJECTS**

No research was specifically conducted under Goal 5 for FY 2006 however, research conducted in other goals were used to accomplish some of the objectives of this goal.

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### **EXTENSION PROGRAMS**

The following extension programs were conducted to achieve goal 5:

1. Youth Development: Youth Educational Support (YES) After School Program
2. Youth Development: Livestock and Poultry Show
3. Academy for the Academic Enhancement of High School Students in the Food and Agriculture Sciences
4. Community and Faith-Based Development
5. Center for Rural and Small Business Development
6. Child Care Program
7. Family Strengthening Program

## **YOUTH DEVELOPMENT**

### **Overview**

According to the 2004 U.S. Census Bureau statistics, 17.8 percent of U.S. children live in poverty. The percentage of children living in poverty is even greater in the state of Louisiana. Although poverty has increased throughout the U.S., it remains considerably high among youth in Louisiana with a large percentage accounting for youth under age 18. According to the 2004 data, Louisiana ranks in the lower one-third percentile among 50 states for quality of life for its youth. The state is ranked number one in the number of youth living in poverty, single parent families, health problems, and parents without high school education. These factors place about 60 percent of Louisiana's youth at risk. Additionally, U.S. adults who engaged in service-learning during their school years were more likely than the rest of their peers to be politically and socially connected to their communities, serve as role models for young adults, understand the importance of lifelong learning, attain a higher level of education, and engage in service according to recent study. Some studies indicate the need for character and quality education, parental involvement, and civic and citizenship education to help ensure the long-term positive development of youth. Through SUAREC's educational programs, strategies have been developed to support academic learning by all members of the family.

### **1. Youth Development: Youth Educational Support (YES) After School Program**

The Youth Educational Support (YES) After School Program works with families that have limited resources. This program provides information that promotes long term commitment to the education of children via their family environment, school, community and Extension staff in selected parishes. The goals of the program are: (i) to expand and cultivate the need for family and community involvement; (ii) to develop positive self-concept (self-esteem) at adolescent level; (iii) to recognize strengths and weaknesses within the family; (iv) to identify alternative methods for redirecting undesirable behavior and applying positive discipline techniques; (v) and to recognize and use public and private service providers as needed. YES program incorporates education and fun in scholastic activities, expands the role of the parent/guardian with academic learning and builds support, self-esteem and confidence through completion of

tasks and projects. YES is operational in ten parishes during the academic school year. In FY 2006, YES Program focused on youth, parents, volunteers, school staff and community members at-large, working together on a community-based project that required total involvement.

**Output:** During the period, SUAREC extension staff made contacts with youth through meetings, YES recruitment, workshops, and by disseminating various publications. Approximately 181 publications/newsletters were distributed to 17,651 contacts. Also, 385 meetings were conducted throughout the period and a total of 17,651 youth attended. Additionally, 1,170 individual (one-on-one) contacts were made through visits. In addition to math, science and literacy sessions, a series of lessons were taught including, development of self-esteem, food guide pyramid, science, building careers, goal attainment, youth gardening; nutrition, conflict resolution, personal hygiene, problem solving, understanding leadership, creativity, youth peer group, peer mediation, anger management, and communication skills. Getting Ready for Back to School Workshop was conducted and youth used math games and other educational activities to reinforce math skills using fraction and solving verbal math problems.

**Outcome:** Extension agents polled youth and parents participants regarding their appraisal of the program and 97 percent of the parents agreed that the program had positively influenced their parent-child relationship. Youth participants are indicated that they were learning new skills and will definitely apply them. They also indicated that they would recommend the program to their peers. Additionally, teachers and volunteers surveyed by the extension agents to assess the impact of YES Program on the youth gave comments expressing that the youth who are participating in the program showed a difference in their character.

**Impact:** The on-going efforts of the YES Program allowed agents and volunteers to make contacts with youth, parents, volunteers, school staff and community members at-large by providing hands-on activities in science, math, reading and character education. In a youth survey conducted by the Office of Planning and Evaluation, during the FY 2006 Family and Youth Exposition, participants responded as follows:

73 percent – Expo session topics were relevant to participant;

74 percent - Knowledge and skills gained will be useful;

64 percent – Expo helped me gain self-confidence;

69 percent – Expo helped me to serve in my community;

70 percent - I would recommend this Expo to others;

58 percent - I found new friends and contacts;

The Family and Youth Expo continues to attract new participants, an indication that more youth are getting involved in the SU Ag Center program and activities. The 2006 survey also showed that 55 percent of the participants had attended the expo before, while 45 percent were first time attendees.

**Scope of Impact:** State specific

**Funding Source(s):** Smith-Lever Act, Section 1444 and matching funds from the State of Louisiana

## **2. Youth Development: Livestock and Poultry Show**

In March 2006, Southern University hosted its 63<sup>rd</sup> Annual Livestock Show. The State Livestock and Poultry Show is a comprehensive program conducted by SUAREC to help youth develop leadership and character skills. The Youth Rabbit Show and the Horse Show also provide opportunities for youth to enhance those skills. In preparation for these shows, youth work with the livestock (beef breeding, dairy, sheep, swine, goats, and poultry) rabbits, and horses concerning proper nutrition and grooming. During the shows, youth are required to exhibit their animals and are judged on industry standards in the areas of showmanship, control and appearance of the animal. The animal is judged for quality and overall appearance according to industry standards. Youth are also provided with the opportunity to sell their animals at an open auction; thus, learning economic, business, and financial management practices. Corporate sponsors of the show are: Coca-Cola Bottling, Winn Dixie, Louisiana Cattlemen's Association, Southern University Teacher and Parents Federal Credit Union, Pilgrims Pride, Gerry Lane Enterprise and House of Raeford.

**Output:** During FY 2006, 14 Special Publications mainly brochures and publicity information and one technical bulletin were disseminated to 3,800 youths and parents in the state. Fourteen meetings, attended by 968 livestock participants were held to assist producers with production, preparation for the show, management and marketing practices. Additionally, the Interim Director and of Livestock Show and other key personnel conducted five media publicity and educational information on three television stations, a radio station, and a daily newspaper thus reaching over 127,500 youth and parents. They visited 30 parishes and made 701 individual contacts in the state to promote the shows. They also solicited and obtained corporate sponsorships for the shows. A total of 126 volunteer leaders were recruited.

**Outcome:** About 500 youth exhibitors with 651 entries from 30 parishes participated in the SUAREC State Livestock and Poultry Show. The Annual Horse Show hosted 750 participants with over 853 spectators; while the Delta Dairy Goat Show attracted 37 exhibitors at the Maurice A. Edmond Livestock Arena. These shows also attracted inner city children ages 2 to 18 years who learned about farm animals. The participants and their parents set up a mini-camp where they stayed together for the duration of the show. As a result, they were able to interact with their peers and exchange ideas ranging from livestock management to school issues.

**Impact:** Approximately 80 percent of youth exhibited leadership skills relative to showmanship of their animal. Four hundred and sixty youth exhibited at the Southern University State and National Rabbit Show. Evaluations of the exhibitors indicate that over 85 percent of the participants said the shows motivated them to try new ideas. One significant impact of the livestock show is that it helps participants to market their

products. Over \$70,000 worth of products were sold during the 63rd Annual Livestock Show. In a youth survey conducted by the Office of Planning and Evaluation, the following results were obtained:

80 percent of the respondents said the shows helped them improve and use their skills;  
40 percent said the shows helped them participate in outreach programs/activities;  
20 percent said the shows helped them stay in school;  
99 percent said the shows enabled them improve their problem solving skills;  
99 percent said the shows helped them to be more active in class and school.

The positive side impacts of the shows according to parents and youth participants interviewed are that it enables them (parents and youth) “do things together” which encourages improvement in communication. Secondly, the shows help to keep youth participants from being idle and in the process engages them as useful citizens. These participants serve as role models to recruit their peers into their clubs especially those who are from single parent homes. Thirdly, for some participants, they are the third generation in their families participating/exhibiting at the Southern University Livestock Show. Here are some of the quotes from parents/grandparents:

- “I started exhibiting at the S.U. Livestock Show in 1960 and my son exhibited the 1980s, and now my grandson and granddaughter are exhibiting”, said one of the grandparents.
- Yet another parent “We have been attending the show for the last twelve years. My first son exhibited first followed by my daughter, and my last born who is a junior in high school is exhibiting. We thank Southern University for the opportunity given to our family”.
- “I have three children, and all of them are exhibiting” said another proud parent.

**Scope of Impact:** Statewide

**Funding Source(s):** Smith-Lever Act, Section 1444 and matching funds from the State of Louisiana

### **3. Academy for the Academic Enhancement of High School Students in the Food and Agriculture Sciences**

High school students in Louisiana who score a minimum of 20 points on the ACT and earn at least a 2.5 on a 4.00 GPA scale are eligible for free college tuition - Tuition Opportunities Program for Students (TOPS) as long as they maintain a good GPA (at least 2.5 on a 4.00 scale) in their college career. Many economically and socially disadvantaged minority high school students cannot qualify for this free tuition opportunity due to their background. They often turn to student loans for financial support. Twenty six students were selected to reside and participate in the program at Southern University for five weeks. Students received academic instructions in mathematics, sciences, English, and humanities. Princeton Review provided 20 hours of group and individualized instruction on test taking skills and strategies in an attempt to better prepare the students for the ACT tests.



**Output:** During Phase I, 26 students from across the state of Louisiana attended the five week residential program at Southern University Ag Center where they received instruction from certified public school teachers in English, mathematics, sciences and the Humanities. Princeton Review was contracted and provided 20 hours of instruction specifically on test taking skills and strategies.

During Phase II of the Academy, 21 of the 26 Phase I students returned to work with an USDA agency or in some instances with the 1890 Cooperative Extension Program or with city government to participate in a professional internship for seven weeks. Each student was assigned an on-site mentor and developed a plan of work for their internship experience. All of the mentors interviewed indicated that the interns really provided a beneficial service to their agency. The interns have each reported that they are better prepared for the “real world” and now have an ideal of what working a “real job” is like. They all felt that after participating in Phase II that they have a clearer vision of what the Food and Agriculture Sciences entails and are better prepared to enter college and do well. Additionally, these 21 students have an advantage that most of their peers do not have, real professional work experience before they begin college.

A no cost extension was requested and granted. With the remaining funds, efforts have been geared towards working with upper elementary and high school students displaced by Hurricanes Katrina and Rita. Workshops, lectures and mini classes are being offered across the state related to the basic life and career building skills from the original proposal.

**Outcome:** As a result of participating in the Academy program, 14 of the 26 students achieved the minimum score of 20 to qualify for the TOPS award, which would allow them free college tuition in state. During Fall Semester 2005, 13 of the 21 students who completed Phase II enrolled in one of the orientation courses offered in the College of Agricultural, Family and Consumer Sciences.

**Impact:** The average annual cost of education at a public university in the state of Louisiana is currently about \$50,000. Due to their participation in the Academy, participants scored higher on their ACT and are eligible for the TOPS award. The result is an annual saving of over \$14,000 for each student (about \$56 per student for four years of college) and a total savings of over \$1,456,000 for 26 participants for four years of college education. Additionally, one student received the USDA Multicultural Scholars Award worth an estimated amount of \$50,000. The success of this project can serve as a model for middle and high schools and community colleges, or for anyone who works with students before they enter four year degree granting programs.

## **COMMUNITY DEVELOPMENT**

### **Overview**

The citizens of Louisiana continue to suffer economically and socially because of earlier dependency on depressed petroleum and agricultural industries. Louisiana is ranked

among the top ten states for poverty and for the opportunities of mainstream America. The economic and community development program works with faith-based and other social and civic organizations to explore and develop enterprises that will foster long-term economic viability.

For almost forty years, community based organizations have struggled to address problems of social, economic and physical distress in low to moderate-income communities throughout the United States. Despite the impressive growth of community based organizations in Louisiana during the past decade, these organizations face numerous human and organizational deficiencies. To flourish in an economy that demands increased accountability, community based organizations need strategies and directions to be effective in their endeavors.

The presence of a strong community development educational program is emerging as a critical need in many land-grant universities in the south. Agriculture, still a powerful economic engine in many parts of the rural south now finds itself sharing the economic stage with several other sectors, including manufacturing, services, and retail trade. Many community economies are growing and diversifying, while others are in an economic tailspin. Technological advances are creating a demand for better-educated, more skilled workers, resulting in the displacement of thousands of Southern workers having little more than a high school education. Our region is witnessing dramatic compositional shifts in its population, including the rapid expansion of the South's Latino and African American populations. While some communities – both urban and rural – have attracted many new residents, others have struggled to hang on to the few residents that remain.

These are a sampling of the complex conditions facing communities in the Louisiana today. The challenges are many, but the opportunities are equally considerable. Enhancing the capacity of communities to build their own future requires guidance, information, and education.

#### **4. Community and Faith-Based Development**

Extension specialists developed a comprehensive program to assist faith-based leaders by developing a Statewide Faith and Community Based Development Initiative that focuses on housing development, economic development, evaluation, strategic planning, organizational development, and health care. The programs were presented at the annual conference, and through various workshops and individual contacts. The Faith and Community Based Initiative consists of two program areas. The 9<sup>th</sup> Community and Faith Leadership Conference was a three-day gathering with over fifteen workshops, several speakers and various agencies from the federal, state and local levels along with several national nonprofit service providers that assist the faith-based community. The second program areas are technical assistance (TA) and Capacity Building that is provided by individual consulting from extension specialists and agents who assist the Faith and Community Based community with organizational development, strategic planning, and project selections. Collaborators involved in the project are the U.S. Department of

Housing and Urban Development, Louisiana Department of Economic Development, various banks (especially Chase Bank), Louisiana Department of Health and Hospitals, the United States Department of Health and Human Services and the Visionary Leadership Institute.

**Output:** In FY 2006, the conference was held in Baton Rouge, Louisiana September 27-29, 2006 as the Community and Faith Leadership Conference (September 27, 2006 was the pre-conference). The theme of the 2006 Conference was “Transforming Communities through Visionary Leadership”. Fifteen workshop sessions were available for participants to update their skills in administration, management, faith-based development, with topics including:

- Move from Vision to Reality;
- Measurements of Financial Health;
- Developing Programs for Change;
- Writing Essentials; Skills and Resources for Practical Theology;
- Ministries and Communities Reducing the risk for Disaster;
- Access to Federal and State Resources;
- Compliance with Internal Revenue Service and Secretary of State;
- Opportunities with the Small Business Administration; etc.

In addition, there were sessions for fellowship and praise, networking, interactions among participants. More than 200 persons attended the conference and participated in the sessions. Highlights of the Conference were inspirational speeches by Rev. Raymond Jetson, CEO of the Louisiana Family Recovery Corps (LFRC), Mr. Robert Bogart, Director, White House Faith-Based and Community Initiative, and the visionary leader Mr. Bill Strickland, President and CEO, Bidwell Training Center and the Manchester Craftsmen’s Guild.

In preparation for the 9<sup>th</sup> Community and Faith Leadership Conference (formerly, Annual Faith and Community Based Conference), 3,334 individuals were reached through mails, visits and meetings; two television, three radio and one newspaper segments were used to advertise and inform the general public about the conference.

**Outcome:** Participants learned about different ways and the techniques of transforming their communities by planning, evaluation, effective management, and visionary leadership. A new collaboration between the SU Ag Center and the Visionary Leadership Institute was born. Participants received very useful information about transforming and managing their communities and where to get help to accomplish their objectives. The keynote address by Mr. Bill Strickland, President and CEO, Bidwell Training Center and the Manchester Craftsmen’s Guild was not only inspiring but moving to participants. Most participants promised a follow-up with Mr. Strickland - to visit the site of at least one of his projects that are transforming youth to become community leaders. A survey conducted by the Office of Planning and Evaluation, 95 percent of the respondents indicated that the conference topics were relevant to them; 98 percent said materials provided at the conference will be useful; 95 percent said knowledge gained will be useful.

**Impact:** The Community and Faith Leadership Conference continues to change lives in and around the state. In a survey conducted by the Office of Planning and Evaluation, respondents stated as follows:

- 95 percent found new contacts and network for collaboration;
- 93 percent said the conference answered important questions;
- 85 percent said the conference changed their opinion on some issues;
- 93 percent said the conference motivated them to try new ideas;
- 98 percent said they will definitely apply knowledge/skills gained;
- 98 percent said they would recommend the conference to others.

More than half (54 percent) indicated that they have not attended the conference before, an indication that the 2006 conference attracted a lot of first time attendees. Additionally, over 97 of all respondents said they will attend the conference next year.

**Scope of Impact:** State and Regional Specific

**Funding Source(s):** Smith-Lever Act, Section 1444 and matching funds from the State of Louisiana

## **5. Center for Rural and Small Business Development**

Rural dwellers in the United States continue to experience high levels of poverty due to lack of economic opportunities. The low quality of life of rural Americans has been a major concern for many, including both federal and state policy makers. About 17 percent of Louisiana residents live below the poverty level. However, poverty rates in some of the state's rural parishes (counties) are as high as 27 percent. The majority of rural communities lack business start-ups, business expansions, housing, economic development and growth. The objective of this initiative was to provide assistance to under represented groups in traditionally agricultural or other natural resource dependent communities in the State of Louisiana for the purpose of encouraging business and economic development.

SUAREC specialists and field agents along with the staff from the Center for Rural and Small Business Development assisted in the creation and sustainability of small business development in the state. Seven parishes (counties) in the south eastern part of the state are targeted – St. Helena, Iberville, East Feliciana, West Feliciana, West Baton Rouge, East Baton Rouge, and Pointe Coupee. A majority of the rural communities in these parishes lack business start-ups, business expansions, housing and economic development and growth. The Center also provides support to surrounding parishes – St. James, Livingston, Ascension, Tangipahoa, and rural communities – Gonzales, Donaldsonville, Denham Springs, Albany, Gramercy, and Litcher. The outreach efforts took place with seminars and one on one business consultations. The small business owners and potential owners were assisted in business plans, strategic planning, credit rating and loan packaging. The collaborators were the U.S. Department of Small Business (SBA), small business development centers and local area chamber of commerce.

**Output:** For FY 2006, four Louisiana rural parishes were targeted for business development; these parishes were East Feliciana, Iberville, St. Helena, and Tangipahoa. According to the U.S. Census figures, the poverty rates for these parishes range from 23 to 27 percent, and the median income ranges from \$24,970 to \$31,630. During the period, 4 workshops/seminars were held; 184 businesses received various forms of assistants; 64 field trips and 151 office visits were made by staff. About 82 inquiries from clients were processed.

**Outcome:** During the year, 183 loan packages totaling \$4,290,000 were processed; 50 loans were approved for \$1,505,000; 36 new businesses were started; 21 businesses expanded; 12 community development projects recorded; and BISNet acquired 30 additional computers and placed in rural communities to provide technology access to those in remote areas.

**Impact:** Thirty-six new businesses were started with loans from the SBA Community Express Loan Program; 50 business loans were approved for \$1,505,000; and 87 new jobs were created/retained.

**Scope of Impact:** State Specific

**Funding Source(s):** United States Department of Agriculture/Rural Development (USDA/RD); Smith-Lever Act, Section 1444

## 6. Child Care Program

Louisiana, has the highest child poverty rate in the south—29 percent and the second highest nationwide, according to the U. S. Census Bureau. It is estimated that there are around 14,000 children who are not receiving services through any other programs. In an attempt to reduce these alarming figures, SU Ag Center continued efforts to make available professional development classes for more than 2,000 child care providers across the state. Twelve thousand of these frontline workers are in licensed child care center facilities or registered family child care homes. The SUAREC Child Care Training Program provides a comprehensive and consistent child training program in eight parishes statewide. The program thus offered centers and family child care providers an opportunity to maintain their license by taking the required 12 hours of educational training. The state requires that child care providers have 12 hours of continuing education hours annually, especially if they are to receive monetary benefits from the state for services rendered to limited income families. Some child care providers operate business with limited resources and limited educational training. This lack of knowledge coupled with economic disparity prevents them from rendering quality care and being successful in the business. Therefore, the program increases educational attainment in child development and quality care so those children from impoverished areas are able to be placed and taught in an environment that is education-friendly.

**Output:** In order to ensure that childcare providers deliver quality care, providers in eight Louisiana parishes have received 12 hours of professional training. Quality childcare exists in homes or facilities when the childcare providers interact with children; maintain safe environments, provide opportunities for children to learn social skills; and help children appreciate diversity in others. These training sessions were offered at convenient times, and held in accessible locations for providers in rural and urban areas of the state. Classes taught to the providers were based on the competency levels of the Child Development Associate (CDA) Credential. As a result of the training, providers have told us about their deficiencies. SUAREC specialists will structure a curriculum that meets the educational needs of most providers and prepare them for the CDA.

Training sessions for Providers:

Clock Hour Training Classes are researched-based classes designed to provide the academic information that corresponds with the Child Development Associate Credential. These child care providers attend classes under the tiers of Learning Environment, Working with Families, Physical and Intellectual Development, Social and Emotional Development, Professionalism in the Workplace, Management, Child Growth and Development, and Observation. During the year, 32 classes were offered with 1,850 participants in attendance. Participants attended class sessions which supported their academic training, enhanced or updated their skills in the classroom.

**Outcome:** About 32 classes were offered with 1,850 providers participating. The classes were made available to a diverse population of participants who included: African-Americans, Caucasians, Hispanics, and other races. All providers attending the classes also completed. About 12 percent and 51 percent of the parents who attended the classes graduated from the first and second sessions respectively.

**Impact:** About 70 family-based child care providers updated their licenses by attending classes, thus saving \$2,800 during the year. Also family-based child care providers saved a total of \$5,600 by attending classes provided by SUAREC as opposed to private consultants. Additionally, regular child care center saved over \$9,250 by attending classes provided by SUAREC as opposed to private consultants.

20 percent of the providers indicated that they would acquire Child Development Credentials.

90 percent of the providers stated that they learned more because the training was sensitive to all learning styles.

89 percent of the providers stated that the structure of the training sessions, and the hands-on activities made it easier to gain more knowledge and increase skills.

74 percent of the providers indicated that child care classes gave them more ideas for class interaction with children and other center teachers.

87 percent of the providers indicated that they benefited more from the sessions than was intended.

**Scope of Impact:** Initially for eight parishes however, more parishes were impacted through the training sessions.

**Funding Source(s):** Funds from the State of Louisiana; Smith-Lever Act, Section 1444.

## 7. Family Strengthening Program

Families lack skills and knowledge in strengthening their family structure and developing a sense of community. Families statewide also lack knowledge in communicating with other family members and individuals in their communities.

**Output:** Extension educators have provided workshops and conducted an annual program that acknowledges families and the culture of families statewide. The programs were couched in the concepts of strengthening families (e.g., communication, contentment, and community). During the year, training sessions afforded 827 mothers and 1,790 other parents the benefit of attending 119 families and parenting sessions. They learned about budgeting, caring for the baby, child development and expectations, communicating with people, car seat safety, etc. There were other class sessions that helped parents grasp children’s stages of development, and modeling and understanding the appropriate behavior for children. These programs, through newsletters and special publications, reached another 2,817 families who did not participate directly in the classes.

**Impact** – Families and other individuals were given a basic background in communication and participated in sessions that allowed for some pragmatic experiences among families. Evaluations reflect that participants attending workshop sessions developed a better sense of communication within the family structure. The short-term objectives for program participants were accomplished in sessions where 95 percent of the family members and other individuals were able to define communication, express the value of communication in their family, and identify methods that could improve their settings. Program participants (40 percent) acquired research-based information which allowed them to change the methods they used in communicating with family members. A majority of the participants in the six classes offered were individuals below the poverty level who cannot afford to pay for such classes. As a result of these classes and other meeting sessions, SUAREC saved the 827 mothers and the 1,790 parents a total of \$130,850 per session and \$785,100 for six sessions. Class sessions held for parents enabled them to care, communicate, and provide safety for the children. Evaluation of the participants indicated knowledge gained and some behavior changes resulting from attending the training. Some direct quotes from participants can be summarized as follows:

- “The classes made me more conscious of how to budget”.
- “The classes helped me learn more about child development and what to expect”.
- “I gained more knowledge about caring for a baby”.
- “I am better able to communicate goals, and prepared for crisis situations”.
- “The class gave me more information on car safety and why rules and requirements are important to follow”.

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## **EVALUATION FRAMEWORK:**

Evaluation is a continuous process which is embedded in SUAREC's entire program development process. It begins with stakeholder inputs where results are used to establish priorities, goals and objectives consistent with state, regional and national issues based on the land-grant philosophy and mission. At the state level, performance indicators are used to measure progress in accomplishing the objectives set by the Center. To ensure that data reported on performance indicators are consistent, valid and reliable, guidelines for reporting data on performance indicators were issued. Follow up reviews to validate information reported quarterly by research and extension personnel are conducted regularly. Additionally, to ensure reliability, supporting documentations are required of all data reported such as, sign-in sheets, meeting/workshop agenda, pictures, travel/contact logs, etc. Finally, the Center conducts evaluation of research and extension programs to ascertain the impact of such programs on the clientele and to determine the usefulness of the programs in addressing the needs of clientele as follows:

1. Impact studies were conducted to determine the benefits of research and extension programs for clients who participated in different programs and activities.
2. Impact studies were conducted to determine the percent of clients who adopted recommended practices to enhance their operations; or percent of clients who utilized educational information to change their behavior.
3. Follow-up surveys were conducted each year to determine possible reasons for client drop out from participation in research projects or extension programs.

Educational programs implemented by the Center are available and useful to all citizens of Louisiana and primarily to clients in the areas of food, agricultural and human sciences, and to urban and rural dwellers, youth, government officials, faith and community leaders, and families.