

May 7, 2002

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Dear Dr. Cooper:

I am electronically submitting our 2001 Plan of Work Annual Report to Mr. Bart Hewitt for fiscal year 2001. If there are any questions, please contact me at jhwalker@scsu.edu or (803) 536-8229 or Sharon Wade-Byrd at zs_byrd@scsu.edu or (803) 536-8697.

Sincerely,

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1890 Research and Extension

2001 PLAN OF WORK ANNUAL REPORT
ACCOMPLISHMENTS AND RESULTS

IN SOUTH CAROLINA
(State)

**SOUTH CAROLINA STATE LAND-GRANT
UNIVERSITY
1890 RESEARCH & COOPERATIVE
EXTENSION SERVICE**

SOUTH CAROLINA STATE UNIVERSITY
(Institution)

**COOPERATING WITH THE
U. S. DEPARTMENT OF AGRICULTURE**

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SOUTH CAROLINA STATE UNIVERSITY
April 29, 2002

INTRODUCTION

South Carolina State University (SCSU) and Clemson University annually receive federal assistance from CSREES/USDA for programs and activities to respond to the demands and diverse opportunities of stakeholders through a plan of work delivery system, that evolves around five national goals. The plan of work illustrates programs' impact to stakeholders and the effectiveness of program management. The South Carolina Plan of Work covers the period of fiscal years October 1, 1999 through September 30, 2004. This Plan of Work involves the continual cooperation between South Carolina State University and Clemson University, as both institutions continue to strengthen the collaboration in meeting the national goals within the research, education, and economic mission areas of the U. S. Department of Agriculture. This plan of work is an integrated plan within the functional areas of research, extension and higher education.

In a collaborative effort, South Carolina State University's 1890 Evans-Allen Research and Cooperative Extension Program and Clemson University began addressing the requirements of the AREERA Act of 1998 by developing and conducting a planning process using the following three basic principles:

- 1) Partnership is essential to the delivery of effective programming.
- 2) Proper planning and program delivery requires information sharing, evaluation, and analysis of outcomes and results.
- 3) Stakeholder involvement is key to program development, priority setting and effective programming.

PURPOSE:

This report depicts SCSU's 1890 Evans-Allen Research and Cooperative Extension Program Compliance with federal regulations relative to the performance plan within the five year plan of work. Furthermore, it highlights SCSU's total efforts to ensure equal access and opportunity relating totally to all aspects of program impacts and services. The 1890 Evans-Allen Research mission is to provide seed-based funding to faculty, staff and students to become engaged in organized research efforts/opportunities to build the research resource capacity of the institution to address problems and issues of concern to limited-resource stakeholders or clientele. The 1890 Cooperative Extension Program delivers research-based programs and activities to help stakeholders and clientele to enhance their quality of living and be better able to respond to environmental changes.

A. Planned Programs (National Goals)

GOAL 1: An agricultural system that is highly competitive in the global economy.

Overview

Presently, the decline of socially disadvantaged minority farmers is attributed to various social, economic and political conditions within the state. Chiefly among them are land loss, discrimination in access to credit, the insensitivity of government at the state and federal levels to effectively address the root causes impacting them, and the lack of commitment to put into place the necessary impact programs that can provide comprehensive and prescriptive solutions for the farmers. Today, there are approximately 1,488 black owned and operated farms in South Carolina based on the 1997 Census Report.

Moreover, the decline in black owned and operated farms are due to other factors; for example, reliance on conventional agricultural practices, pesticide contamination, soil erosion and degradation, and no crop insurance, etc. Therefore, the overall mission of Goal 1 was to assist socially disadvantaged farmers in reversing their economic decline through research, educational and technical outreach assistance. Through federal funds, two Program Focus Areas were emphasized: 1) Retention of Small/Minority Farmers, and 2) Sustainable Agriculture. The following accomplishments were achieved:

Retention of Small/Minority Farmers:

Special initiatives/projects focused on: (1) Heifer Project International (HPI) Meat Goat Project, (2) Heifer Project International (HPI) Beef Cattle Project, and (3) Heifer Project International (HPI) Pastured Poultry Project. These initiatives/projects provided management training to farmers in the areas of controlled breeding, pasture management, herd health and nutrition and increased farm profitability. The HPI Meat Goat Project consisted of one hundred and three farmer participants, in which 77.7% were African-Americans, 10.7% were Caucasian-Americans, and 11.6% were Native-Americans. There were 17 meat goat marketing workshops conducted for the 103 farmers participants that resulted in 93 or 90% of them increasing their knowledge base, and 10 or 9.7% refreshing their knowledge as it pertained to meat goat. In addition, 42 or 54.1% of the farmers reported adopting and applying their knowledge on their farms, and 57.3% of them were planning to adopt and implement the knowledge learned.

Second, the 1890 Extension HPI Beef Cattle Project provided assistance to 257 farmers in the areas of raising beef cattle, improving the blood-line, livestock production and management of their existing herds. The racial makeup of the 257 farmers that participated in this project were African-Americans (80.9%), Caucasian-Americans (17.9%), Asian-Americans (8%), and Native-Americans (4%). A total of 17 Beef cattle management workshops were conducted for the farmers who participated, resulting in 227 or 88.3% of them increasing their knowledge base, and 30 or 11.7% of

the participants refreshing their knowledge as it pertained to beef cattle; 137 or 53.3% of the farmers reported adopting and applying their knowledge on their farms, and 98 or 38.1% planned to adopt and implement the knowledge learned.

Last, the Heifer Project International Pastured Poultry Project, assisted 26 small farmer operations to establish pastured poultry as an alternative farming enterprise on their farms. The racial makeup of this initiative consisted of 53.9% Caucasian-Americans, 26.9% African-Americans, and 3.7% Asian-Americans. There were a total of 5 pastured poultry workshops conducted to assist the 26 farmers that resulted in 92.5% of them increasing their knowledge base, and only 3.9% participants that refreshed their knowledge. In addition, 11 or 42.3% of the farmers reported adopting and applying their knowledge on their farms, and 57.7% of them indicated planning to adopt and implement the knowledge learned.

A research cooperative agreement funded with Evans-Allen Research Funds, looked at the impact of NAFTA on South Carolina, Georgia and North Carolina in the Southeast Region. According to 1997 Census data on exports, South Carolina exported \$.685 billion dollars worth of commodities to Mexico in 1996, with food products accounting for \$65.5% of sales. Preliminary results based upon farm surveys across the southeast region suggests that farm size may be a factor affecting competitive efficiency under NAFTA. This data also indicated that medium and large farms may benefit the most from NAFTA.

Sustainable Agriculture:

The Small Farmer Outreach Training & Technical Assistance Program (SFOTTAP) is continuously working to help to reverse the economic decline of socially disadvantage farmers and ranchers in South Carolina and increase their participation in the local, state, and national agricultural programming, and establish farmers networks and cooperatives as a means of improving their income. This program initiative promotes programs and activities to preserve farmlands, conserve and foster sustainable agricultural policies, and encourage efforts to increase and satisfy consumer demand for food grown on farms. A growing number of farmers have begun to adopt viable alternative practices with the goals of reducing input costs, preserving their resource base, and protecting human health. The total number of participants in the programs were one thousand one hundred and twenty-four (1,124) farmers, of which 40% indicated they have adopted viable alternative practices with the goals of reducing input costs, preserving one resource base, and protecting human health.

Major accomplishments for SFOTTAP are the following: (1) assisted two families in acquiring loans to establish swine farm operations in Clarendon County, totaling over \$1,000,000 dollars; (2) assisted one family in Sumter County to acquire a loan to establish a poultry operation, totaling over \$1,500,00 dollars; (3) provided training and assistance to 9 small scale farmers and 1890 Cooperative Extension Specialists on sustainable crop and fish farming techniques; (4) evaluated the potential for marketing the crops and fish of small scale farmers in speciality markets in South Carolina; (5) coordinated and assisted in conducting a marketing workshop for small and under-served farmers, that was sponsored by several USDA agencies, Michigan State University, and several 1890 Extension

programs; and (6) provided leadership in obtaining a grant from CSREES for \$75,000 dollars to develop a Risk Management Education Curriculum for Small Scale producers for the production and marketing of speciality crops with the 1890 Extension System.

Three cooperative agreements funded by the Evans-Allen Research Program were: 1) a project that looked at ways to Improve Crop and Weed Control by Controlling the Soil pH, 2) a sustainable small-scale Aquaculture/Vegetable Farm in South Carolina project, and 3) an Occupational Hearing Loss Among Farmers and their Families research project. Preliminary findings of the first project indicated that soil samples tested have a strong buffer system and that respiration rates were higher for cucumbers, string beans, garden peas, soybeans, and okra seedlings.

Second, the Small-Scale Aquaculture/Vegetable Farm in South Carolina project. This aquaponics technology looks to contribute to sustainable agriculture in the following ways: (1) evaluates the potential for marketing organic crops and Tilapia fish of small-scale farmers in speciality markets in South Carolina; (2) determines the components within aquaculture and organic crop productions for a full integrated alternative sustainable farm enterprise, relative to cost/benefit ratio; and (3) nine (9) small-scale farmers are involved in this research. Preliminary data indicates routine water analysis is a critical component to having a successful greenhouse tank system. The tank systems are commonly utilized to breed Tilapia and provide a controllable breeding environment where offspring can be easily extracted.

Last, the Occupational Hearing Loss Among Farmers and their Families research project. Hearing data indicates that there is a 11% prevalence hearing loss in rural areas, whereas, a 7.9% hearing loss in metropolitan areas. This increase incident of hearing among farmers may in part be due to the association of noise from farm machinery and exposure to a number of chemicals over a period of time. This research project contributes to sustainable agriculture in the following ways: (1) determining the levels and duration of farmers' exposure to farm noises, chemicals, and their possible interactions; and (2) estimating the probability of hearing impairment caused by the most commonly used farm machinery and chemicals. Preliminary findings indicate that approximately ten (10) farm families were involved in the pilot study.

a. **Extension (E) and Research (R) results supported w/ agricultural research and extension formula funds (i.e., outputs).**

EXT1: 1) There were seventy-six (76) workshops, thirteen (13) demonstrations, and five (5) tours conducted to support sustainable agriculture programs and activities.
2) Three-hundred and forty-five (345) farmers indicated that they increased their knowledge base, whereas, forty-one (41) stated they refreshed their knowledge.
3) There were one hundred and ninety (190) farmers that indicated they adopted the recommended practices to use continually upon their farms.

EXT2: 1) Three-hundred and forty-five (345) farmers participated in training, of which two-hundred and sixty-two (262) or 76% of these farmers adopted the practices learned in the training.

- RES1: 1) The NAFTA research project reported one publication in a referred journal and one in progress for this reporting cycle.
- 2) There were four presentations made at agriculture marketing/economic conferences.
- 3) The research project has not reported any training seminars/ workshops conducted to targeted audiences and the assessment of impact.
- 4) A representative farm model is now in operation in the NAFTA Project to evaluate the impact of the NAFTA trade policy on local farmers in South Carolina.
- 5) The research project has not reported any new course development for international trade during this reporting period.
- 6) There were no graduate students graduating with a thesis this year, as a result of this research project.
- RES2: 1) The Soil pH research project has not reported any publications in referred or non-referred journals for this reporting cycle.
- 2) There were at least eight (8) presentations at conferences/meetings for this reporting cycle.
- 3) The Soil pH research project reported thirty (30) training seminars/workshops conducted during the collection of the soil samples across targeted farms throughout the state.
- 4) The number of farmers adopting pH practices and their economic impact on farmers' yield and income has not been determined during this annual reporting cycle.
- 5) Fifteen undergraduate students are been trained in Soil pH biological and chemical techniques.
- RES3: 1) Farmers' attitudes/perceptions as it relates to economic benefits in the aquaculture research project has been positive. Currently, there are nine farmers participating in the project. One farmer has purchased additional tanks to increase stocking of Tilapia fish and another adopted the raceway expansion production system.
- 2) The integrated management practices utilized by participating farmers has resulted in several farmers (3) expanding their operations and increasing their investments with their own personal resources.
- 3) There were two demonstrations concerning aquaculture and hydroponic integrated practices, where a total of seven farmers participated. Their assessment of the demonstrations was very positive. Non-participating farmers who attended the demonstration expressed interest in setting up an aquaculture project model.

4) To date, of the nine farmers who are participating in the research project, all nine are currently adopting the practices of the project and increasing their market potential.

5) There is one (1) undergraduate and two (2) graduate students being trained in small-scale aquaculture and vegetable production enterprising using various aquaponic and hydroponic methods and techniques.

RES4: 1) The Occupational Hearing Loss research project is assessing approximately ten farm families from the pilot study.

2) There is one (1) undergraduate student and one (1) post-master staff member involved in this research project.

3) During this reporting cycle, there were two (2) referred journal articles and six (6) poster presentations at various speech and hearing professional conferences.

4) There was no health workshops nor demonstrations conducted during this reporting cycle.

HE1: A total of five (5) B.S. and four (4) M.S. students graduated from the School of Agribusiness and Economics during the reporting period.

a. **For fiscal year 2001, the following successes were highlighted:**

EXT1: 1) Twenty (20) farmers reported an increase in income as a result of 1890 agriculture assistance.

2) 1890 Agricultural Extension specialists assisted seven (7) farmers who have been able to retain their farms during the fiscal year 2001.

3) Twenty-nine (29) farmers adopted the record keeping cash flow plan recommended by 1890 Agricultural Extension agents.

4) One-hundred and ninety (190) farmers indicated adopting recommended practices and integrating them into their farming operations.

EXT1: 2) Twenty-five (25) small/minority farmers who integrated sustainable practices into their farming operations enhanced their water quality.

RES1: The NAFTA project is still ongoing. Programmatic recommendations for development in Extension Outreach Activity to Fruit and Vegetable Farmers has not been submitted, pending implementation of the project.

RES2: The Soil pH project is still ongoing. The final Research Performance Report and the development of a soil test laboratory for small-scale, minority farmers, integrated with 1890 Extension's agricultural production programming, has not been completed, pending completion of the project.

RES3: The Aquaculture project is still ongoing. The final Research Performance Report and integration of workshops/demonstrations of small-scale aquaculture and vegetable

production enterprising through continued Extension programming is not yet completed, pending completion of the project.

RES4: The Occupational Hearing Loss project is still ongoing. The final Research Performance Report and establishment of an on-going Hearing Health Program, in collaboration with 1890 Extension Outreach Programming, is not completed, pending the outcome of the project.

HE1: Five (5) B.S. and four (4) M.S. students graduated from the areas of Biological Sciences and Agribusiness and Economics. The total number of students employed in the agricultural field included three (3) with a B.S. degree and three (3) with a M.S. degree.

b. There were six impacts to the clientele and stakeholders reported, under **Goal I**, although only three will be mentioned. First, a Cambodian-American resident organized a Cambodian Community Association to provide meat, vegetables, and herbs for Cambodian-Americans living in the surrounding areas. For example, through the 1890 Extension Program, the upstate farmers received Pastured Poultry training sponsored by the Heifer Project International and a grant to begin producing 100 Cambodian style chickens. In addition, the community began participating in the Evans-Allen Aquaculture project, looking at the economic feasibility and sustainability of growing Tilapia fingerlings and organic vegetables. About 65% of the community members are able to secure their native food products from their own local farming through Extension and Research programming.

Second, an African-American small farm family used their own resources to purchase a 206 acre tract of land. They hoped to one day build a pig nursery and build their future home. With the 1890 Extension program assistance, the couple was able to develop a farm plan and then assist in securing financing from the Pee Dee Farm Credit. Through an integrator, the couple received approximately 3,900 pigs to raise until they were six weeks old, thus allowing them to deliver about six batches a year, bringing in an annual income of \$81,000. Since both are retired, this new source of income will provide their son full-time employment. In addition, they completed the S.C. Confined Animal Manure Managers Certification Program to be better equip to manager their farm waste.

Last, the 1890 Extension Program assisted a group of small farmers to identify alternative crops that would grow in the Southern region. Five small farmers agreed to plant two to six acres of Romaine and head lettuce between December and February. Once the lettuce was planted and grown on plastic mulch, using a low trickle drip irrigation system, it was then harvested between the months of March and April. The farmers cooperating in the lettuce initiative produced over 125,000 pounds of lettuce and earned a total of \$17,000.00. They marketed their lettuce to fast food restaurants

on the eastern seaboard, which allowed them collectively to increase their income significantly.

- d. In assessing the accomplishments of the South Carolina Plan of Work Performance for 2001, the 1990 Census Data estimated that South Carolina State University's 1890 Evans-Allen Research and Cooperative Extension Program is potentially able to provide service to 72,669 under-served/under-represented persons. Of that number, 39,968 (55%) were males and 32,701 (45%) were females. Of the 1,448 black farms in South Carolina, approximately 848 (57.5%) black farmers received assistance from the SCSU Extension Program. For the Fiscal Year October 1, 2000 - September 31, 2001, the actual number of 14,469 (19.9%) under-served/under-represented clients were contacted. Of that number, 8,202 (56.7%) were males and 6,267 (43.3%) were females. The clientele/stakeholders served by SCSU's 1890 Extension Program indicated their satisfaction via verbal feedback and comments from the various programs they attended.

In regards to race, 9,927 (68.6%) participants were Black, 4,159 (28.7%) White, 204 (1.4%) Native-American, 91 (63%) Asian, and 88 (68.6%) Hispanics were served. Under Goal 1, SCSU's 1890 Evans-Allen Research and Cooperative Program actually served 5,186 persons. Gender makeup was 3,925 (75.7%) males, and 1,201 (24.3%) females who received services during the reporting cycle. As it relates to race, 2,954 (57%) Blacks, 2,150 (41.5%) Whites, 66 (1.3%) Asians, and 16 (.31) Native-Americans were served. The need to expand is evident, although financial constraints limit the ability to serve all seven county clusters comprehensively.

Last, since the 1890 Cooperative Extension's Small Farmer Outreach Training and Technical Assistance Program (SFOTTAP) was unsuccessful in renewing the USDA 2501 grant for the 2002-2003 funding cycle, other alternatives are being explored to sustain the SFOTTAP programming, to include seeking funding through the next funding cycle.

- e. **Source of Funding:** (*Section 1444* - \$443,135; *Section 1445* - \$244,573 estimate)
FTE's - 5.0

Key Theme - Agricultural Profitability

- a. Given that the amount of foreign agricultural and non-agricultural trade of the United States has increased substantially since NAFTA became effective as of January 1994, USDA has forecasted that US exports and imports would continue to grow. Although, such changes has resulted in reduction and/or elimination of domestic income, employment, purchasing power for the farm and non-farm sectors alike. Therefore, a researcher with the Evans-Allen 1890 Research Program developed a representative

farm model to evaluate the impacts of NAFTA. The first objective focuses specifically on examining the NAFTA trade implications for the growing Southeastern economy, particularly fruit and vegetable products that were being traded in Mexico, and estimating the dollar volume of trade creation and diversion, output and employment creation in the vegetable and fruit industries attributable to NAFTA in South Carolina.

- b. **Impact** - Although this project is still ongoing, preliminary results from farm surveys suggest that the large and medium size farms are expected to benefit from NAFTA and the international free trade agreements. Meanwhile, the small-sized farms are expected to face stiffer competition, with many fruit and vegetable producers going out of business; therefore, indicating farm size as a factor affecting competitive efficiency under NAFTA.
- c. **Source of Federal Funds** - Evans-Allen (\$159,052)
- d. **Scope of Impact** - Georgia, North Carolina, and South Carolina

Key Theme - Aquaculture

- a. The 1890 Evans-Allen Aquaculture research project has been concentrating on small farms sustainable production practices, targeting speciality market niches for small-scale farmers in South Carolina. The project's bottom line is to increase farmers income and provide the researcher with pertinent information to properly evaluate the impacts of sustainable practices in aquaculture and organic vegetable production for small-scale farmers in South Carolina. The impact of sustainable integrated agricultural management practices on natural resources (*water quality, soil fertility*) are major issues/concerns for participating farmers and researchers.
- b. **Impact** - Preliminary results have shown that all nine small-scale farmers were able to develop an alternative agriculture business through experimenting with sustainable aquaculture enterprises that focused on enhancing their profitability with organic vegetable and fish marketing. Although, only one farmers, in particularly, has identified his market to be between a zero (0) and twenty (20) mile radius to sell his entire stock of Tilipia. Several farmers indicate marketing successes for their product. In that there was no prior Tilipia market, there was a 100% market increase for farmers.
- c. **Source of Federal Funds** - Evans-Allen (\$146,440)
- d. **Scope of Impact** - South Carolina

Key Theme - Small Farm Viability

- a. One 1890 Agricultural Extension specialist is developing a comprehensive program to assure viability of small farmers in the state. The program assists farmers in obtaining management training in the areas of controlled breeding, pasture management, herd health and nutrition, improving blood-line, livestock production, and establishing pastured poultry as an alternative farming enterprise, and increase farm profitability. The Heifer Project International (HPI) Meat Goat, Beef Cattle, and Pastured Poultry Projects are three components of the program. Each project is conducted at different intervals to allow farmers to take advantage of all three programs. The programs are presented via workshops and through demonstration field trips to expose and promote the concepts of integrating programming.
- b. **Impact** - It was reported that a total of 386 small farmers participated in such endeavors throughout the fiscal year 2001, where 295 (76.4%) Black farmers, and 71 (18.4%) White farmers were served. Of this number, 368 (95.3%) indicated that they increased their knowledge, 41 (11.9%) stated they refreshed their knowledge and 190 (55.1%) of 345 farmers adopted the practices.
- c. **Source of Federal Funds** - (Section 447180) USDA Office of Outreach, (\$175,000)
- d. **Scope of Impact** - South Carolina

Key Theme - Plant Germplasm

- a. Farmers in South Carolina are continuously faced with low yields for row crops, which ultimately affects the local and national food supply. Therefore, a researcher with the Evans-Allen Research Program is conducting research to determine if soil pH manipulation can increase food supply and control weeds. To date, the research has surveyed the soil pH in six South Carolina counties, where soil samples were collected at a depth of 6 to 12 inches deep. By manipulating soil pH, the researcher looks to determine which pH allows various plants to grow best, in order for the farmer to have the best yields and better weed control growth. This type of knowledge of soil pH on seed germination is extremely important to the physiology and distribution of plant growth in studying the effects of young seedling growth.
- b. **Impact** - Preliminary studies indicate that all soil samples have a strong natural buffer system that resists alternation without the use of chemicals. Respiration studies were performed from selected crops and weeds. All samples were collected after 15 days of growth in petri disk germinators. The respiration rates were higher for cucumbers,

string beans, garden peas, soybeans, and okra seedlings at a pH of 4, 9, 4, &6 and10 respectively. To date, ten (10) farmers have received feedback from their soil that was tested. This project has eight (8) undergraduate students who are biology and chemistry majors being trained in chemical and biological laboratory techniques.

- c. **Source of Federal Funds** - Evans-Allen (\$137,643)
- d. **Scope of Impact** - South Carolina

GOAL 2: A safe and secure food and fiber system.

Overview

According to Healthy People 2000 Food Safety Objectives (1995), food-borne illnesses in the United States have led to a major cause of economic burden, human suffering, and death. While foodborne diseases, their causes and effects are better understood today, emerging risks need to be monitored for several reasons: (a) the food supply of the United States is changing dramatically, especially the conditions under which animals are raised; (b) consumers are changing, for an ever increasingly number of elderly or immune-suppressed persons who are at higher risk of severe illness has to be taken into consideration; and (c) new and emerging food-borne pathogens have been identified, which can cause diseases unrecognized 50 years ago. It is estimated that 6.5 to 33 million people become ill from microorganisms in food each year, and an estimated 9,000 of these individuals die as a result. According to a 1998 report released by the United States Department of Agriculture, it indicated that \$5.2 to \$28.2 billion was spent for food-borne illnesses from meat and poultry alone.

During the fiscal year 1999-2000, South Carolina (SC) had an reported 10 cases of food-borne illnesses, which also included complaints of symptoms related to food-borne illnesses. Although Elliott (1999) of the Department of Health and Environmental Control (DHEC) states that SC numbers are very low due to overwhelming cases never reported, improved science based detection, surveillance, prevention, and education is needed.

Food Safety, Security and Quality:

To ascertain information that would directly address the issues of food-borne illness in the State of South Carolina, a researcher from 1890 Evans-Allen Research program is experimenting with insect pest management techniques that include use of the insect's own chemical communication signals (pheromones) to reduce health risks. This project, called "Genetic Evaluation of Insect Responses to Integrated Pest Management Techniques," looks at using genetic analyses in identifying the chromosomal location of genes involved in the regulation of pheromones in fruit flies. This research may result in designing specific inhibitors to proteins which could be manufactured and used to disrupt mating in targeted Fruit-Fly species. It is anticipated that this project will provide important information on the long-term effect of pheromone-based control measures and help determine how complex the

genetic basis of pheromone regulations is in evolving a successful pheromone-based pest management program.

a. Extension (E) & Research (R) results supported w/ agricultural research and extension formula funds (i.e., outputs).

EXT1: 1) Eleven planned programs were reported during this reporting period, with one hundred and fifty-six (156) participants. One-hundred and seventeen (75%) participants increased their knowledge base concerning food safety, security and quality; whereas, twenty-one (13.5%) refreshed their knowledge pertaining to the subject.

2) Eleven (11) food safety initiatives are being implemented throughout various counties in the state by the 1890 Cooperative Extension Program Staff.

RES1: 1) The researcher reported that he completed the crosses designed to homogenize the backgrounds of lines that are hybrids for different regions of the Tai - Y and Canton-S 3rd chromosome.

2) The project is still ongoing. The Final Research Performance Report has not been completed, pertaining to the identification of chromosomal location of genes involved in pheromone production and mating selection for fruit -flies, pending completion of the project.

3) This research project did not report any publications in referred or non-referred journals for this reporting cycle.

4) There were no presentations at conferences nor meetings for this reporting cycle.

b. The Highlights successes for fiscal year 2000 in Research & Extension were the following:

EXT1: 1) One-hundred and fifty-six (156) individuals who participated in sixty-eight (68) programs dealing with food safety, security, and quality. There were one-

hundred and seventeen (86.5%) participants who increased their knowledge and understanding of Food Safety and Food-borne illnesses and intoxications.

Twenty-one (13.5%) participants indicated they had refreshed their knowledge.

2) Seventy-six (76) clients participated in food safety and sanitation practices. In addition, sixty-eight (89.5%) participants demonstrated/adopted knowledge in proper food safety practices.

3) Eighty-eight (88) clients participated in promoting positive food safety practices.

Of this number, sixty-eight (77.3%) adopted practices and promoted positive food safety practices within their community.

RES1: This project is still ongoing. Programmatic recommendations for development in Extension Outreach Activity relative to Food Safety and Security has not been submitted, pending project outcome.

- c. Several 1890 Research and Cooperative Extension county agents were certified by the national Restaurant Association which allowed them to provide training to other food handlers (cafeteria workers, fast food employees). In addition, the Food Safety video “Ask Sofia Safe About Food Safety” is still being utilized to conduct training workshops. Furthermore, as a result of this project, three (3) undergraduate students were trained in insect pest management research techniques as a part of their education programming in the biological and physical sciences.
- d. In assessing the accomplishments of the South Carolina Plan of Work Performance for 2000, the 1990 Census Data estimated that South Carolina State University 1890 Evans-Allen Research and Cooperative Extension Program is potentially able to provide service to 72,669 under-served/under-represented persons. Of that number, 39,968 (55%) were males and 32,701 (45%) were females. Under Goal 2, 452 clients were served throughout the program area. The total data by sex generated 52 (11.5%) males and 400 (88.5%) females who received service. In regards to race, 55 (12.2%) whites, 392 (86.7%) blacks, and 5 (1.1%) Hispanics received services as under-served/under-represented participants.

Source of Funding: (*Section 1444* - \$86,746; *Section 1445* - \$69,730 estimate)
FTE's - 3.0

GOAL 3: A healthy, well-nourished population.

Overview

According to the 1996 National Health and Nutrition Examination Survey (NHANES), 33% of adults in the United States are obese. It was estimated that an annual health care cost for obesity was about \$70 billion in the United States. South Carolina continues the trend, for it has a dismal health statistic, for example, heart disease, obesity, cancer, and stroke account for nearly 2/3 of all deaths in the state. As it relates to minorities, the heart disease death rate was 50% higher, and cancer related death rates were 40% higher than that of whites on the average. South Carolina Department of Health and Environmental Control (DHEC) identified four at-risk groups: African Americans, blue collar workers, youth, and low-income groups. DHEC reported 80% of all cancers, 50% of heart disease deaths, and 50% of all stroke deaths were due to lifestyle habits. As mentioned, obesity was a serious problem among pre-adolescents. Children who were overweight were at an increased risk for becoming obese adults and more likely to develop health related problems such as: diabetes, heart disease and high blood pressure. A Surgeon General's Report on Nutrition and Health (2000)

suggested that being overweight was a risk factor for diabetes mellitus, hypertension, stroke, coronary heart disease and some types of cancer and gallbladder diseases.

Therefore, a minute change in lifestyle, such as reducing one's intake of fatty acids and increased physical activity levels, reduces the number of deaths attributed to lifestyle factors annually in South Carolina and the Nation. The report denoted the possibility of one healthy behavior learned in childhood that could be sustained through adulthood (*eating more nutritious foods and exercising*). As a result, prevention activities targeted at child/pre-adolescents are especially appealing and low cost-effective. The overall mission of **Goal 3** is to provide a healthy, well-nourished population through research and education on nutrition. The development of more nutritious foods enables people to make health promoting choices. Focus on assessment of nutrition behaviors of pre-adolescents can determine the prevalence of obesity to promote positive lifestyle behaviors. Through the Evans-Allen Research Program, the following were accomplished for this reporting period:

Nutrition Education, Diet and Health:

To ascertain information that would directly address the issues of concern to the State of South Carolina, one extension and one research project was initiated. First, The Food Stamp Nutrition, Education Program (FSNEP), which is a multi-state, multi-institution nutrition education intervention program, was implemented to facilitate families' selection and preparation of meals consistent with their cultural traditions, while improving their overall health. Funded by the Food and Nutrition Services and administered in cooperation with the SC Department of Social Services, this project has been implemented in three counties (Barnwell, Calhoun and Orangeburg). The curriculum used for the FSNEP was *Family First: Nutrition, Education and Wellness Program (FF:NEWS)*, a multi-state collaboration (Texas, Oklahoma, Arkansas, and Louisiana). The FF:NEWS curriculum is made up of four (4) modules with 8-12 lessons in each module.

Second, an 1890 Obesity research project is concentrating on the Assessment of Nutrition and Exercise Behaviors on Pre-adolescents in Bamberg, Calhoun, and Orangeburg Counties. This project has seven objectives which are the following: 1) to determine pre-adolescents' knowledge and understanding of the dietary guidelines for fat, calories, cholesterol, fiber, calcium and sodium; 2) to determine the degree to which pre-adolescents are following the recommended dietary guidelines; 3) to examine pre-adolescents perceptions of health risks associated with intake of excess dietary fat, sodium and calories; 4) to determine the prevalence of obesity in pre-adolescents in Bamberg, Calhoun and Orangeburg Counties; 5) to identify constraints to and factors for developing healthy lifestyle behaviors; 6) to develop and pilot test a nutrition and exercise intervention program the three surrounding counties to promote positive lifestyle behaviors which may prevent the development of chronic diseases later in life; and 7) to develop a nutrition extension program activity for the 1890 Extension Outreach Programming. Currently, this project has administered a pre-test instrument to determine: a) demographic data, disease relationship, and nutrition knowledge or target population. It is anticipated that this project will provide information to assist the 1890 Cooperative Extension Program in developing nutrition programs for its clientele and stakeholders.

a. Extension (E) & Research (R) results supported w/ agricultural research and extension formula funds (i.e., outputs).

EXT1: 1) Sixty-eight planned programs were reported during this reporting period, with five hundred and thirty-five (535) participants. Four hundred and seventeen (417) (77.9%) participants increased their knowledge base concerning nutrition education, diet, and health; whereas, one-hundred and eighteen (22.1%) refreshed their knowledge pertaining to the subject.

2) Thirty-four (34) program clients participated in the healthy lifestyle practice initiatives. However, a surprisingly twenty-five (73.5%) participants indicated they have adopted the practice of a healthy lifestyle to develop healthier lifestyle behaviors.

3) Twenty-seven (27) program clients participated in the dietary analysis and nutritional assessment plan sessions. All twenty-seven (100%) participants indicated that they planned to adopt the assessment plan.

b. The Highlights successes for fiscal year 2000 in Research & Extension were the following:

RES1: 1) One hundred and eighty-two (182) pre-adolescent clients are participating in the study.

2) The percent of participants adopting recommended dietary guidelines could not be determined at the time of this report.

3) The project is ongoing. The impact of nutrition and exercise intervention programs on pre-adolescent participants has not been determined as of this report.

4) The development of a nutrition extension activity with 1890 Cooperative Extension Programming is being planned from this research.

HE1:1) Seventy-four (74) B.S. and twenty-two (22) M.S. students graduated in Nutritional Sciences. Fifty students (67.6%) with a B.S. degree and fifteen (68.2%) with a M.S. degree reported being employed and/or accepted into graduate school in the Agricultural field.

HE2:1) Sixteen (16) B.S. and zero (0) M.S. students graduated in Health Education. Eight (50%) with a B.S. degree reported being employed in the Agricultural field.

c. One graduate student was trained in the areas of data collection, data analysis, and nutrition education techniques with the project.

d. In assessing the accomplishments of the South Carolina Plan of Work Performance

for 2000, the 1990 Census Data estimated that South Carolina State University's 1890 Evans-Allen Research and Cooperative Extension Programs are potentially able to provide service to 72,669 under-served/under-represented persons. Of that number, 39,968 (55%) were males and 32,701 (45%) were females. **Goal 3** serviced a total of 535 persons. According to gender, there were 201 (37.6%) males and 334 (62.4%) females. In relationship to race, there were 119 (22.2%) whites, 390 (72.9%) blacks, and 26 (4.9%) Native Americans. Given that South Carolina has a dismal health statistic, where minorities death rate are 50% higher as it pertains to cancer related death rates than whites, it is evident that more minority health research initiatives need to be conducted in the area.

- e. **Source of Funding:** (*Section 1444* - \$121,478; *Section 1445* - \$151,083 estimate)
FTE's - 6.0:

Key Theme - Human Health

- b. The primary goal of the 1890 Extension nutrition intervention program is to help families select and prepare meals consistent with their cultural traditions while improving their overall health. This program is conducted by a multi-state consortium of 1890 Cooperative Extension Programs in the following states: OK, TX, SC, LA, AR and MO. The program instructs seniors at various Council on Aging sites and adults participating in the Department of Social Services on food safety, food management, bargain purchasing, and basic nutrition. Thirteen lessons for unit buying and food safety techniques were conducted in the FF:NEWS Programming.
- c. **Impact** -The FF:NEWS program provided substantiating data that showed two-hundred and twenty (220) participants from South Carolina becoming more conscious in the area of food safety and healthy and nutritious eating practices. Although, the racial/ethnic minority groups mostly served were African-Americans and Caucasians, the FF:NEWS program was able to do outreach for more than three-hundred (300) migrant work participants. Many of the migrant workers still spoke Spanish as their primarily language.
- d. **Source of Federal Funds** - Food and Nutrition Services (\$68,000)
- e. **Scope of Impact** - South Carolina

Key Theme - Human Nutrition

- b. The 1890 Evans-Allen Obesity research project assesses pre-adolescents in Bamberg, Calhoun, and Orangeburg Counties. This project determines prevalence of obesity and promotes positive lifestyle behaviors by offering free aerobic evening class sessions twice a week.
- c. **Impact** - As a result of pre-test data collected on anthropometric measurements, food and exercise recalls, self-esteem and nutrition/exercise questionnaire, preliminary results indicated a need for aggressive interventions to reduce the incidences of obesity among pre-adolescents.
- d. **Source of Federal Funds** - Evans-Allen (\$121,478)
- e. **Scope of Impact** - South Carolina

GOAL 4: Greater harmony between agriculture and the environment.

Overview

South Carolina has experienced increased threats to water quality, wildlife, and forestry over the past two decades. Although the state attracts newcomers because of its climate, low taxes, and aesthetically pleasing environment, this influx of newcomers poses a great threat to the environment in South Carolina. The Environmental Protection Agency (EPA) report states, about 49% of the nation's surveyed rivers, lakes, and estuaries were not clean enough for fishing or swimming (Allen, 1995). Therefore, the usage and management of natural resources requires a great deal of public education on water quality, wildlife, forestry, and other environmental issues.

Gianessi (1986) states that runoff from agricultural land was the biggest source of pollution of water resources. He further concluded that agriculture sources were responsible for 46% of the sediment, 47% of the total phosphorus and 52 % of total nitrogen discharged into our waterways. South Carolina had a total land area of 19.3 million acres, of this 4.6 million acres were in farmland, 2.5 million acres (53.6 %) represents crop-lands; 1.46 million acres (35.3 %) represents woodlands; .2 million acres (5.3 %) represents pasture-lands; .2 million acres (4.8%) represents farmlands in Conservation Reserve and Wetland Reserve; .3 million acres (5.8%) represents other lands on farms. Small Farms in South Carolina (1-99 acres in size) represented approximately (54.5%) of the total farm population. Educational programs, activities, and demonstrations were targeted as natural resource concerns by addressing small and limited resource farms and farm families. In order to accomplish the mission of **Goal 4**, attention was placed on *Program Focus Area 451: Natural Resources and the Environment*. Where the program focused on public educational programs on water quality, wildlife, forestry and other environmental issues that targeted natural resource concerns of diverse limited resource families, youth and communities.

Natural Resources and the Environment:

Under Focus Area 451: Natural Resources and the Environment, the following results were accomplished: (1) A Wood Education and Resource Center Proposal entitled, “USDA: Forestry /Wood Education Resource Camp: Enhancing the Appreciation of Forestry and Wood Product Industry by Rural Minority Youth in South Carolina” was submitted and approved for approximately \$29,000 dollars; (2) The South Carolina Wood Magic Program was successfully facilitated for 4th and 5th graders from several surrounding counties, where a total of two thousand five hundred and seventy-five (2,575) youth participated; (3) A Section 319 Water Quality grant entitled “BMPs and Responsible Homestead Practices to Reduce Fecal Coliform Bacteria in Horse Range Swamp Watershed” was submitted and approved for \$250,000 dollars; (4) The South Carolina ROPS Program (*pattern after Kentucky’s Community Partners for Healthy Farming ROPS Project*) was sponsored by SCSU and Clemson Cooperative Extension Services to encourage farmers to have safer working practices. Approximately four hundred and eighty (480) clients participated in the project; and (5) A multi-state Master Tree Farmers Program sponsored by SCSU, the American and South Carolina Tree Farm Committees, Clemson University, the Southern Region Cooperative Extension Service, the U.S. Forest Service, the Resource Management Agency, the Association of Consulting Foresters, the S.C. Forestry Commission and the forest product industry.

a. **Extension (E) & Research (R) results supported w/ agricultural research and extension formula funds (i.e., outputs).**

EXT1:1) Two hundred and twenty-six (226) participants attended and completed workshops and demonstrations on issues pertaining to the natural resources and the environment.

2) There were sixty-three (63) trainings, workshops and tours pertaining to environmental education and natural resources for targeted audiences.

3) There were one thousand eight hundred and thirty-seven participants reported participating during this reporting cycle, although, surprisingly, more than half (66.8%) or 1,227 participants indicated they were adopting the practices taught to them.

4) Three poster presentations were presented at water quality and the environment conferences.

HE1: Sixty-six (66) B.S. students graduated in Environmental Sciences. Thirty-three (50%) with a B.S. degree reported being employed and/or went on to graduate school in the Agricultural field.

b. **The Highlights successes for fiscal year 2000 in Research & Extension were the following:**

EXT1:1) There was a 15% increase in water quality practices among under-served communities. They incorporated filtering their water prior to drinking.

2) The percent increase of small and limited resource farmers in use of BMPs

could not be assessed at the time of this report.

3) Percent increase in forestry management plans could not be assessed at the time of this report.

c. Three (3) undergraduates and two (2) graduate students were trained in the areas of greater harmony between agriculture and environment techniques.

d. In assessing the accomplishments of the South Carolina Plan of Work Performance for 2000, the 1990 Census Data estimated that South Carolina State University 1890 Evans-Allen Research and Cooperative Extension Program was potentially able to provide service to 72,669 under-served/under-represented persons. Of that number, 39,968 (55%) were males and 32,701 (45%) were females. Being that only 1,498 black farms in South Carolina exist, SCSU reported assisting over half of them 924 (61.7%). **Goal 4** provided services to a total of 1,837 under-served/under-represented clients, of which 1100 (59.9%) were males and 737 (40.1%) were females. In addition, there were 573 (31.2%) whites, 1,234 (67.2%) blacks, 10 (.54%) Asians, 10 (.54%) Native Americans and 10 (.54%) Hispanics.

As it relates to runoff, agricultural land has become one of the biggest water pollution sources. The 1890 Cooperative Extension Project looks forward to the start up of the Section 319 Water Quality entitled, "BMPs and Responsible Homestead Practices to Reduce Fecal Coliform Bacteria in Horse Range Swamp Watershed.

e. **Source of Funding:** (Section 1444 - \$20,549; Section 1445 - \$350,000 estimate)
FTE's - 6.0

Key Theme - Pesticide Management

a. A genetic analysis has been undertaken to quantify the number of genes involved in the production and response to pheromones in the fruit fly, *Drosophila melanogaster*. This will determine how many there are and evaluate whether the evolution to resistance will occur. This species is genetically, physiologically and behaviorally similar to other dipterans and insect pests. The number of genes involved will indicate the complexity of the genetic basis for production and response to pheromones. The more complex the genetic basis, the less likely resistance to pheromone-based control measures will evolve during long term use. Background studies have indicated that several genes are involved in the pheromone system of the fruit fly, but a specific number has not been determined, and the effects of the individual genes have not been identified. To date, researchers have found one gene on one chromosome to indicate that the method works. Two other chromosomes still have to be analyzed. The analysis should be completed within two years.

- d. **Impact** - So far, preliminary evidence indicates that pheromone-based insect control measures could be used on a long term basis without the evolution of resistance. However, such a procedure would increase the confidence of farmers in the long-term regarding the effectiveness of these methods. The methods are safer than using pesticides and more environmentally friendly, thereby improving the safety to vegetables and produce. In addition, such techniques would increase the popularity of integrated pest management, with a consequent reduction in the use of traditional and more toxic pesticide-based control measures. It would also serve as a form of educational information tool to farmers in their adoption of integrated pest management techniques.
- c. **Source of Federal Funds** - Evans-Allen (\$86,746)
- d. **Scope of Impact** - South Carolina

GOAL 5: Enhanced Economic Opportunity and Quality of life for Americans.

Overview

The overall mission of **Goal 5** was to provide family development and resource management educational programs to improve the well-being of the family structure as well as enhance parenting skills, manage resources, care for children and dependent elderly family members through assessment skills. In addition, the focus was to build partnerships within the community with public and private organizations. In order to accomplish the mission, 1890 Evans-Allen Research and Extension Program at South Carolina State University directed their attention to two Program Focus Areas: 1) 4-H Youth and Family and 2) Community, Leadership and Economic Development. Through the Evans-Allen Research Funds, the 4-H Youth and Family component accomplished the following:

Youth and Family:

To ascertain information that would directly address the issues of youth and family to the State of South Carolina, one extension and four research projects were initiated: (1) *The Learning to Improve Future Earnings* (LIFE Skills) Extension project. This project had a total of five classes being held for the Department of Social Services' Temporary Assistance for Needy Families (TANF); (2) *Comparison of Teachers' Perceptions of Academic Indicators in Rural and Urban Schools in South Carolina*. This project finding indicated there were no statistically significant differences found between teachers in rural and urban schools. The data indicated that teachers placed a high degree of control over the learning environment on external forces; (3) *Adolescent Violence and Acting-out After a College Student Mentoring Experience* in 5th and 6th Grades. Currently, this project is in its

fifth year. Data was collected on the first four years on mentoring between college mentors and children who participated in the program indicated they had a positive experience. The students are asking when will they receive another mentor; (4) *The Impact of the Personal Responsibility and Work Opportunity Reconciliation Act on Welfare Recipients* (PRWORA) was to query the extent rural poor needed public assistance to maintain their material well-being, and the most effective strategies to move from welfare to work. Findings indicate that affordable childcare and transportation are major issues that confront these recipients; and (5) *Determinants of Perceptions, Aspirations and Goal Attainments of Rural Single Teen Mothers*, was to examine the impact of familiar and other social support systems relative to the psycho-sociological well-being and the quality of life of rural single teen mothers. The project findings indicated that 60% of the experimental group had significant improvements in their grades when compared to the previous grading periods. Interviews with family member showed that as much as 80% of the participants had positive behavioral and self-esteem changes since being in the project. Therefore, it is anticipated that the model for the experimental group would be implemented in other communities upon the completion of the research.

Community, Leadership and Economic Development:

In examining the second *Focus Area 552, Community, Leadership and Economic Development*, one has to note the SCSU 1890 Research and Extension Program on-going affiliation with the Northeastern Corridor of Orangeburg Community Development Corporation (NCOCDC), the New Brooklyn residents and surrounding neighborhoods. It was this partnership that assisted the 1890 Extension Program to foster stronger collaborations and help area residents develop their capacity for community and economic development. Also, the residents of Wando Huger Community Development Corporation (WHCDC) requested technical assistance from the 1890 Extension Program to form a community based non-profit organization to address the needs and concerns of their residents. Today, SCSU 1890 Extension Program only provides technical assistance to this organization on an “as needed” bases.

The NCOCDC’s major accomplishments include the following: (a) Emergency Home Repair Program that was developed and implemented; (b) The Board of Directors established a partnership with SCSU and Orangeburg County to renovate homes in the service area, (c) Eighteen families applied for the program with seven homeowners selected to participate in the program, (d) Five Pentium computers, printers, software, and computer furniture were purchased to equip a lab at the NCOCDC office, that allowed teaching computer literacy courses to the elderly, youth and other service area residents.

The Wando Huger Community Development Corporation was created to be a community voice for the residents of the Wando and Huger communities in the southern area of Berkeley County, which involved grassroot community leaders and residents. The purpose of the WHCDC was to guard against land loss in the community through programs of property ownership and land loss education. This organization’s major accomplishments included: (a) galvanizing the community to stop the original plans of the South Carolina Port Authority, (b) establishing collaborations and networks within the community to create internal and external partnerships, (c) implementing workshops on heir property,

wills and other land loss prevention topics, (d) establishing an office for the community development corporation and (e) organizing the first community-wide fund-raising event; a Christmas Extravaganza 2000.

The *1890 Youth Services Program* served more than 5,053 youth between the ages of five and eighteen. The primary objectives of this program were to (a) provide youth an opportunity to participate, (b) learn practical hands-on life skills, and (c) ascertain leadership skills to enable them to become leaders for the 21st Century. This program along with summer day camps, S.T.A.R. (*Serious Teen Acting Responsible*) chapter meetings, and after school tutorials (etc.), allowed youth to actively participate and receive benefits from programs that addressed self-esteem development, re-mediation and enrichment of academic skills, cultural enrichment, career awareness, financial management skills, social skills development, diversity training, community development and service learning activities. Such programs are administered by state specialists, county agents, consultants, university faculty and volunteers during school hours, after school programs and summer camps. Collaborations were between school districts, social services, the State Department of Education, DARE programs, HUD Agency, Boys & Girls Clubs, Chambers of Commerce, sheriff's departments, various schools at South Carolina State University and other colleges and universities within the state.

a. **Extension (E) & Research (R) results supported w/ agricultural research and extension formula funds (i.e., outputs).**

EXT1: 1) Two hundred and three (203) planned programs were conducted with 3,732 participants. There were ten (10) home visits reported and at least 12 impact statements from the program.

2) There were data of two hundred and sixty-six (266) comparative assessments of family development and resource management programs by national, county, and state.

EXT2: 1) Fifty-one (51) planned programs were conducted with 529 participants, where (50%) the participants adopted the practices and (93%) increased knowledge.

EXT1:1) There were 9 educational and training workshops. The impact of the workshops and trainings were significant to the participants by adopting the techniques and methods presented during the workshops.

2) There were no strategic plans developed during this reporting cycle.

3) Thirty-seven (37) businesses were assisted in terms of economic and business plan development. The impact of this assistance yielded two business plans that received funding.

4) There were 4 collaborations and 18 memorandums of understanding with other community service providers signed to operate a legal services program, home buyer education program, home ownership counseling program and a health screening program. The collaborators were the following: TRMC, County of Orangeburg, Claflin University CDC, and SC Center for Equal Justice.

EXT2: 1) The development and maintenance of the community asset databases has not been constructed.

2) The level of community volunteerism has remained constant since the establishment of the NCOCDC.

3) There was a negligible increase in (diversity - gender, race, ethnicity, religion, age, socio-economic status) participation and involvement in community projects.

4) There was a substantial increase in collaboration and partnerships among the local community leadership and internal and external organizations.

5) Two grants were awarded to increase the financial support of community-based efforts.

RES1: 1) There has not been a comparative assessment of pre-service and in-service teachers and impact on targeted rural and urban schools, relative to students' ability to learn, school environments and community involvement.

2) There were no refereed publications, but two presentations for this reporting cycle.

3) The development of methods for training pre-service and in-service teachers to meet the needs of rural and urban schools has not been constructed.

4) One graduate and one undergraduate student were involved with the project.

RES2: 1) Findings indicate a positive effect of mentoring occurred in the earlier years and overtime.

2) School officials suggested that the violence and acting-out behavior among participating mentees decreased tremendously.

3) Mid-year data indicated that college-age mentors had a positive effect on their mentees.

4) There were no refereed publications nor presentations at the time of this report.

5) The long-term benefit to children engaged in mentoring has not yet been determine.

6) The effect of mentoring to college-age mentors' educational goals and aspirations is currently being assess.

RES3: 1) There was a 60% improvement of participants', attitudes and beliefs of their quality of life.

2) Eighty-six percent (86%) of the family members who were interviewed, stated positive reactions and support of their daughters in the project.

3) There were no refereed publications, but three presentations during this report cycle.

4) The pilot program for improving the quality and variety of social support to single teen mothers, during their transition to adulthood, is still under

construction.

- RES1: 1) One hundred fifty four thousand three hundred and ninety-five dollars (\$154,395) were expended toward assisting the welfare recipients.
2) There were four welfare to work recipients' that move from welfare to work during the course of this project.
3) Impact of county level policy and implementation of welfare to work is still being worked upon for welfare recipients' successful transition.
4) There was one refereed publication and three presentations given during this report cycle.
5) There were several undergraduate and graduate students who had involvement in the research and outreach work of this project.

HE1: Forty-nine (49) B.S. and three (3) M.S. students graduated in Family and Consumer Sciences.

HE2: Seventy-one (71) B.S., one-hundred and thirty-seven (137) M.Ed., and fifteen (15) M.A.T. students graduated in Education, although data was not available concerning their employment.

b. **The Highlights successes for fiscal year 2001 in Research & Extension were the following:**

- EXT1: 1) There was a substantial increase of program participants' knowledge about family development and resource management.
2) Sixty-seven point seven percent (67.7%) of program participants indicated that they had adopted resource management practices.
3) Twenty-eight point-four percent (28.4%) of program participants indicated that they understood the ways community involvement could support the family structure.
- EXT2: 1) The percent of decrease in the "at-risk" data among youth participants as compared to youth who do not participate in the programs has not been reported.
2) During the time of this report, no data was reported from parents and school officials on the observed behavior of participants.
- EXT1: 3) Several partnerships and collaborations were established during this fiscal reporting cycle with S.C. State Finance Development Association, Federal Home Loan Bank of Atlanta, and the Enterprise Foundation, etc.
- RES1: The Final Research Performance Report and development of training methods for pre-service and in-service teachers in rural and urban schools is in the process of being completed.

RES2: The Final Research Performance Report and recommendations to Middle School Counselors, Teachers and Administrators for program development in addressing violence and acting-out behavior in the early adolescent years is in the process of been completed.

RES3: The Final Research Performance Report and development of a pilot program for single teen mothers, and recommendations for Extension educational programming involving single teen mothers is in the process of been completed.

RES1: The Final Research Performance Report and recommendations to supporting Extension educational programming for project activity in targeted counties is in the process of been developed.

HE1: The number of B.S. and M.S. graduates in Family and Consumer Sciences who obtain employment in family or consumer related fields was not reported at the time of this report.

HE2: The number of B.A., M.Ed., and M.A.T. graduates in Education who obtain employment in education related fields was not reported at the time of this report.

c. The 1890 Cooperative Extension county agents were certified by the national Restaurant Association which allowed them to provide training to other food handlers (cafeteria workers, fast food employees). In addition, a Food Safety video "Ask Sofia Safe About Food Safety" is continued to be used to conduct workshops. Furthermore, as result of this project, two (2) undergraduates students were trained in insect pest management techniques.

d. In assessing the accomplishments of the South Carolina Plan of Work performance for 2000, the 1990 Census Data estimated 1890 Research and Cooperative Extension Program was potentially able to provide service to 72,669 under-served /under-represented persons. Of that number, 39,968 (55%) were males and 32,701 (45%) were females. Under **Goal 5**, 6,694 persons participated in this program area. The total data by sex included 2,878 (43%) males and 3,816 (57%) females. As it relates to race, 1269 whites, 5180 blacks, 152 Native Americans, 15 Asians and 78 Hispanics.

The need for expansion is apparent, but the financial resources are already amplified in this area. Additional funds would enables the 1890 Extension Program to better serve the clientele whom they serve.

e. **Source of Funding:** (*Section 1444* - \$561,704; *Section 1445* - \$407,479 estimate)
FTE's - 7.0

Key Theme - Jobs/Employments

- e. The primary goal of the Impact of the Personal Responsibility and Work Opportunity Reconciliation Act on Welfare Recipients was to query the impacts of (PRWORA), their coping of termination of public assistance, level of success programs have with transition of welfare recipients from welfare to work.
- f. **Impact** - Resulting information from this study is facilitating an understanding of the poor needs of public assistance to maintain their material well-being, and the most appropriate strategy to move welfare recipients from welfare to work. In addition, provide policy makers with the necessary information to develop policies that are target toward the poor that assist them to achieve self-sufficiency.
- g. **Source of Federal Funds** - Evans-Allen (\$154,395)
- h. **Scope of Impact** - South Carolina

Key Theme - Impact of Change on Rural Communities

- e. A 1890 Evans-Allen research project has been concentrating on factors that influence the perceptions' of teachers in rural and urban schools in South Carolina, by assessing the educator perceptions of issues related to students' ability to learn, their community involvement, school environment, their nature of problem solving, and belief about pupil control.
- f. **Impact** - Rural school teachers' indicated they meet the needs of their students in rural communities by maximizing their learning environments. Although, urban teachers seem to think they were limited by their environment. Thereby, showing the need for enhancing teachers' opportunities to develop alternative and innovative learning environments to meet the varied learning styles of their students.
- g. **Source of Federal Funds** - Evans-Allen (\$152,607)
- h. **Scope of Impact** - South Carolina

Key Theme - Conflict Management

- e. A 1890 Evans-Allen research project has been concentrating on an outcome study relative to adolescent violence & acting-out. The objectives of this study were the

following: (1) obtain data from and about fifth and sixth grade children that will assist in determining information about the various factors impacting the children studies; (2) obtain data in the sixth and tenth grades from adolescents who are mentor in the fifth and sixth grades to determine the impact of a mentoring experience with a college-age mentor; and (3) determine the effects of mentoring in earlier years on adolescent violence and acting-out in high school adolescents in Orangeburg County. This research project goal is to provide important data relative to the effects of planned mentored experiences to vulnerable youngsters, by using college students as mentors.

- f. **Impact**- Initial results of the two-year mentoring experience of rural at-risk youth has shown a significant positive results in regards to behavior, grades and school attendance for those who had college-age mentors. This study have provided the foundation for future studies that investigate the various factors that influence or determine adolescent violence or acting-out.
- g. **Source of Federal Funds** - Evans-Allen (\$104,824)
- h. **Scope of Impact** - South Carolina

Key Theme - Children, Youth, and Families at Risk

- e. An 1890 Evans-Allen research project has been investigating endogenous and exogenous facts affecting single teen mothers by evaluating their perceptions, aspirations and goal attainment relative to their quality of life. Utilizing a multi-disciplinary arch-type, the researcher examines the micro-sociological phenomena from a holistic approach. The primary objectives of this research was to examine the impact of familiar and other social support systems relative to the psycho-sociological well-being and the quality of life of rural single teen mothers.
- f. **Impact** - Findings indicated that 50% of the experimental group had continual significant improvements in their grades when compared to the previous grading period. Positive behavioral and self-esteem changes occurred in 65% (28) of the participants. In addition, 86% of the participants who were interviewed stated positive reactions and support pertaining to their daughters participating in the project.
- g. **Source of Federal Funds** - Evans-Allen (\$54,909)
- h. **Scope of Impact** - South Carolina

Key Theme - Promoting Housing & Business Programs

- e. Two non-profit organizations: Northeastern Corridor of Orangeburg Community Development Corporation (NCOCDC) and Wando Huger Community Development Corporation (WHCDC) helped area residents develop their capacity for community and economic development. Therefore, the on-going affiliations continue to maintain and operate a legal services program, home buyer education program, home ownership counseling program, and health screening program. Knowingly, the WHCDC was created to be a community voice for the residents of the Wando and Huger communities in the southern area of Berkeley County, to galvanize the organization to guard against land loss in the community through programs of property ownership and land loss education.
- f. **Impact** - (NCOCDC) a (501C-3) non-profit organization, and a Community Development Housing Organization (CHDO), assisted in the restoration of safe and sanitary housing to enhance the quality of life of participants who participated in the Emergency Home Repair Program. In addition, addressing the digital divide issues through its mind on-line computer literacy courses to the elderly.
- g. **Source of Federal Funds** - USDA Rural Business Service
- h. **Scope of Impact** - South Carolina

B. Stakeholder Input Process

Knowing that section 102(c) of the AREERA Act of 1998 requires that each land grant institution gather and provide information relative to stakeholders. South Carolina State University 1890 Research and Cooperative Extension sought stakeholder input from the following: 1) the community at - large, 2) County Advisory Committee Members, 3) Research and Extension Administrators, 4) Extension Agents, and 5) 1890 Research and Cooperative Extension Staff. A portion of the 1890 Research and Cooperative Extension Summer Retreat served as training for all 1890 Research and Cooperative Extension Administrators, Agents and Staff to become facilitators in public stakeholder input forums. During the training, all attendees complete d the process of identifying what they felt were needs and concerns within South Carolina communities.

A modified nominal group technique was used for all groups to identify community needs and concerns. Specific instructions were given to the trainees and were followed at each Public Forum. The Public Forums were planned and implemented at 16 sites throughout the state of South Carolina. Six South Carolina congressional districts were covered within the sites. At least two locations per congressional district were served. Each County Advisory Committee Member received a special invitation to attend one Forum from their local Extension Agent. Community members were asked to attend the Forums through flyers placed in local community businesses, churches, area Extension

Offices, local newspaper ads, and radio public announcement spots. Of the 56 community members who attended the Public Forums, 96% were African-American, 4% Caucasian, and 45% male & 55% female. The group identified Children & Youth, Education, Housing (Living and Working Environment), Community Leadership and Development, Access to Information, Economic Development, Land Ownership & Other Agricultural Issues, Health & Nutrition, Transportation and Job Skills as the top ten needs and concerns of South Carolina citizens.

A Ph.D. candidate from South Carolina State University, College of Education, Mrs. Geraldine Duke, was provided community stakeholder input as a source of information. In Mrs. Dukes study, over 1900 persons from traditional and non-traditional audiences were surveyed to identify the most important community concerns for the 21st Century. Her results indicated that the important issues facing South Carolinians in the 21st Century were Population Growth, Environmental Concerns, Community and Economic Development, Agricultural Productivity, Family and Educational Issues.

Lastly, forty-seven Extension Administrators, Agents, and Staff participated in the community needs and concerns input session. Of those who participated, 96% were African-American, 4% Caucasian, 70% female and 30% male. This stakeholder group identified Children & Youth, Housing (Living & Work Environment), Education, Health & Nutrition, Job Skills, Land Ownership & Agricultural Issues, Transportation, Finances, Economic Development and Community Leadership and Development as their top ten issues and concerns for South Carolinians. When all stakeholders' data were aggregated (combining the community results with the Extension Administrators, Agents, and Staff results), the top ten issues for South Carolinians in the 21st Century were: Children and Youth, Housing (Living & Work Environment), Education, Health & Nutrition, Community Leadership and Development, Economic Development, Land Ownership and Agricultural Issues, Access to Information, Job Skills, and Transportation. The compiled data projected the Program Focus Areas and accompanying activities for South Carolina State University, and the 1890 Research and Cooperative Extension Plan of Work, which reaffirms the usefulness of the stakeholder process in general.

C. Program Review Process

The Merit Review process for 1890 Cooperative Extension work at South Carolina State University (SCSU) included the submission of program curriculums, projects, planned activities and materials (printed, audio and/or visual) to a Merit Review Panel (MRP). The committee established criteria to review the content appropriateness, capacity and impact of all interventions addressed in the Plan of Work. All Extension work is being conducted in accordance with the Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA), Public Law 105-185.

The Merit Review Panel membership consists of 12 members as follows:

- One program coordinator
- Two county agents

- One professor from the School of Education or the School of Business
- One instructor/professor from the Department of Family and Consumer Sciences
- Two persons representing agencies or organizations who work with limited resource customers
- Three persons from county advisory councils
- Two persons involved in 1890 Research

The Associate Administrator of the Cooperative Extension Program serves as the committee chair. Members have staggered two to four year terms with one fourth being rotated off and replaced each year. The panel's responsibility is to conduct reviews for the duration of the five year Plan of Work. They meet once per quarter to review programs and projects and determine if curriculums are appropriate to provide the desired educational experiences. The group's focus is on changes in social, economic or environmental conditions, or the development of/or modifying a curriculum in order to obtain the desired outcome as prescribed in the plan of work. Such a panel has the support of the 1890 Research and Cooperative Extension Administrator and the University Administration to provide service as a requirement of the AREERA Act of 1998.

The 1890 Research Peer Review Committee of South Carolina State University is composed of four subcommittees, which is representative of the four research problem areas to the 1890 Evans-Allen Research Program. The panels are made-up of six-member subcommittees, with the 1890 Senior Associate Research Director holding the position of chairperson for each subcommittee. The subcommittees, with the assistance of other peer professionals, evaluate project proposals, which are developed for funding consideration departmentally from academic areas of the university. Upon receipt of a project proposal to the Senior Associate Research Director, the project proposal is submitted to the Director of 1890 Research and Cooperative Extension.

Once approved by the Director and the Senior Associate Research Administrator, the project is submitted to the appropriate Peer Review Subcommittee for review. After the subcommittee reviews the merits of a project proposal, its findings are submitted to the Senior Associate Research Director, who then communicates with the proposal writer at the Department level as to the findings of the review and further action. After the subcommittee approves of a proposal, the Senior Associate Research Director then submits the project proposal to the 1890 Research Director for further review through the State Experiment Station. Thus, the proposal is prepared and submitted to Cooperative State Research, Education and Extension Service (CSREES), USDA for final review and official approval. Once approved by CSREES, authorization is given to the 1890 Research Director to fund the proposal from the appropriated funds of Evans-Allen. As to date, there has been no significant changes to the 1890 Extension or Research Program Peer Review Process.

D. Evaluation of the Success of Multi and Joint Activities

Multi-State/Multi-Institutional

(1) *Families First: Nutrition Education, and Wellness System (FFNEWS)*: A nutrition education intervention program designed to help families select and prepare meals consistent with their cultural traditions while improving their overall health. This program is conducted by a multi-state consortium of 1890 Cooperative Extension Programs in the following states: OK, TX, SC, LA, AR and MO. The two critical issues addressed and identified by stakeholders in the 5-Year Plan of Work were Children & Youth, and Health & Nutrition. There were a total of eight hundred and eighty-seven (887) under-served and under-represented South Carolina participants for the fiscal year 2001 in the FFNEWS program. Outcomes described in the 5-Year Plan of Work for Health and Nutrition were met. All participants received information regarding nutrition information by participating in classes. Three persons, who were formerly welfare recipients, are now funded through a grant as volunteer assistants. As a result of this planned program, FFNEWS was able to do outreach to more than three-hundred (300) migrant worker participants whose primarily language is Spanish.

(2) *The Greater Minority Participant Program (TGMPP)*: A program effort geared toward improving diverse youth participation in 4-H activities sponsored by the Association of Extension Administrators and South Carolina State University 1890 Cooperative Extension. Its overall goal is to increase all racial and ethnic participation in 4-H at the local, state and national levels. This effort is to foster a meaningful collaboration among the traditional partners (CSREES, National 4-H Council, land grant institutions-1862 & 1890), new youth development organizations and organizations with racial/ethnic minority clientele.

In addition to South Carolina State University (SC), there are 14 other 1890 Cooperative Extension Programs in the following states participating in the program: FL, MD, AL, MS, LA, KY, AL, AR, MO, VA, NC, GA, DE and TX. Two critical issues addressed and identified by stakeholders in the 5-Year Plan of Work were Children & Youth, and Education. There were a total of three thousand, and fifty-eight (3,058) of under-served and under-represented South Carolina participants for the fiscal year 2001 in The Greater Minority Participant Program. The racial/ethnic total makeup was 2,664 (87.1%) Blacks, 394 (12.9%) Whites, zero (0%) American-Indians, 0 (0%) Hispanics, and 0 (0%) Asians, respectively. The gender make-up was 1,596 (53%) females and 1,462 (47%) males. Outcomes described in the 5-Year Plan of Work for 4-H Youth and Families were met. Although there were 3,058 participants that participated in The Greater Minority Participant Program, there was only (292) 4-H adult volunteers and (18) 4-H youth volunteers of 4-H Extension Programs. As a result of the planned program TGMPP, indicates there was a constant increase in the participation of minorities.

Multi-State

Comparative Study on the Impact of NAFTA, on South Carolina & the Southeastern Region:

This is a study that evaluate the impact of NAFTA on fruit and vegetable trade at the state and regional levels in South Carolina and the Southeast region. Preliminary results based upon farm surveys across the southeastern region suggest that farm size may be a factor affecting competitive efficiency under NAFTA. This data also indicated that medium and large farms may bebenefit the most from NAFTA.

Master Tree Farmers Program: This program was held at SCSU 1890 Research building for seven consecutive Tuesday evenings and fifty other sites in nine other states. The purpose of the short - course was geared toward anyone who was a forest landowner or thought about purchasing forest land, teaching the principle of sustainable forestry and showed landowners how to manage their land to meet their objectives. This multi-institutional Farmers' Program was sponsored by SCSU, the American and South Carolina Tree Farm Committees, Clemson University, the Southern Region Cooperative Extension Service, the U.S. Forest Service, the Resource Management Agency, the Association of Consulting Foresters, the S.C. Forestry Commission and the forest product industry.

Multi-Institutional

South Carolina "ROPS" Program: This program was patterned after Kentucky's Community Partners for Healthy Farming ROPS Project. The purpose was to encourage farmers to have safer working practices, which approximately four hundred and eighty (480) participants participated. This program was sponsored by SCSU and Clemson Cooperative Extension Services.