RESEARCH PLAN OF WORK

FOR THE

Agricultural Research Program

COLLEGE OF AGRICULTURAL,
FAMILY AND CONSUMER SCIENCES

SOUTHERN UNIVERSITY AND A&M COLLEGE

PRESENTED TO

***C*OOPERATIVE *S*TATE *R*ESEARCH, *E*DUCATION**
***A*ND *E*XTENSION *S*ERVICE**

UNITED STATES
DEPARTMENT OF AGRICULTURE

FEDERAL FISCAL YEARS

2000 - 2004

EXECUTIVE SUMMARY

As required by USDA/Cooperative State Research, Education and Extension Service, the College of Agricultural, Family and Consumer Sciences at Southern University and A&M College herein presents its five year Research Plan of Work. It is presented consistent with the agricultural research mission of the college, to conduct basic and applied research to: 1) improve the quality of life and well being for the people of Louisiana and society in general, 2) enhance agricultural productivity while protecting and improving the environment, and 3) achieve a more sustainable and equitable use of food, fiber, family management and natural resources for healthier and well nourished families. These mission statements are consistent with USDA's National goals.

The College presents its Research Plan of Work as part of four established research programs: 1) Plant and Animal Production Systems, 2) Human Nutrition, Health, Family and Consumer Sciences, 3) Urban Forestry, Resource and Environment, and 4) Economic, Marketing, Policy and Community Development. Each research program incorporates a number of research studies to generate information relevant to agricultural issues in the state of Louisiana. Currently, eleven research studies are presented which are supported through the Evans-Allen formula funds. Studies are presented according to guidelines established by USDA/CSREES.

The Plan of Work is an embodiment of identifiable reachable agricultural issues statewide and plans to address these issues. It also includes the process used to solicit stakeholders' input. Emphasis is also placed on multi-state research activities and the scientific peer review process used to ensure program validity and relevance.

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I. PLANNED RESEARCH PROGRAMS

The College's research activities are organized into four broad research programs. Each program includes projects which are supported by Evans-Allen funds. They are presented below consistent with applicable USDA's National goals.

	Goal 1	Goal 3	Goal 4	Goal 5
1890 Research				
	Program 1 Includes projects 1 through 5	Program 2 includes projects 6 & 7	Program 3 includes projects 8 through 10	Program 4 includes project 11

NATIONAL GOAL 1: To achieve an agricultural production system that is highly competitive in the global economy.

PROGRAM 1: Plant and Animal Production Systems

STATEMENT OF ISSUES: Agricultural profitability is of paramount importance to the state of Louisiana because the economy remains heavily dependent on income from farm production and agricultural processing enterprises. Wide variation exists in the profitability and management expertise of farm and agribusiness firms, particularly small farms and small agribusiness firms. Louisiana has a diverse agricultural economy and requires a dynamic research program to deal with crops, livestock, and natural resource issues. The average farm size in the state is 306 acres. However, farms vary in size from large commercial operations to small scale producers. The latter is faced with the greatest challenge of generating sufficient income to provide a family living. Of the 27,000 farms in the state in 1992, slightly more than 60 percent of them reported sales below $20,000 annually. By definition, these farms are classified as small farms. Critical agricultural issues characterizing small farms are: 1) limited operating capital; and 2) lack of adequate technical expertise, including management and access to competitive markets.

Currently, the Plant and Animal Production Systems Research Program within the college places great emphasis on addressing agricultural issues of small producers. Many small producers in the state of Louisiana raise beef and swine for the market and maintain some poultry for home consumption.

A growing number of small-scale producers are beginning to rear rabbits and goats as alternative sources of both food and income. As this trend continues, research information is needed on production practices, market alternatives, and nutritional values of these enterprises. Also, small-scale producers in the state who are shifting from agronomic crops to horticultural crop production need similar research information as have been highlighted among critical issues identified by stakeholders.

Economic opportunities exist for small agricultural producers who adopt alternative livestock and crop enterprises such as goats, rabbits, vegetables, fruits and herbs to name a few. The overall goal of the plant and animal production systems research program is to generate empirical information for enhancing

economic opportunity and quality of life among small-agricultural producers in the state of Louisiana.

Areas of study for the plant and animal production systems research program over the next several years will seek to:

a. Evaluate alternative crop and livestock enterprises.

b. Develop and evaluate promising low-input agricultural systems.

c. Develop uses for Louisiana agricultural food and fiber products.

d. Develop and apply biotechnology in search of solutions to agricultural and related problems.

e. Develop ways to enhance the adoption of appropriate technology among small agricultural producers and businesses.

f. Enhance agricultural productivity among small agricultural producers.

g. Encourage youth interest and involvement in agriculture and natural resources

This research program includes four projects. Each project is presented below according to the format established by CSREES.

PROJECT 1: Utilization of Crawfish Waste

PERFORMANCE GOALS:

- Increase usefulness of crawfish waste
- Improve the protein diets of swine and goats
- Enhance the condition of soils while protecting the environment

OUTPUT INDICATORS:

- Research reports to the scientific community, technical reports and workshops for agricultural producers and the general public
- Peer reviewed materials (conference papers, books, book chapters, reports and other materials) produced and disseminated

OUTCOME INDICATORS

- More efficient and effective use of agricultural by products
- Reduced cost of protein diets for swine and goats

- Enhanced soil condition for growing crops

- Reduction in the cost of feed additives for protein supplement for animals

KEY PROJECT COMPONENTS:

- Improve protein diets of animals through feeding refractionated crawfish meal

- Improve crop production through the use of refractionated crawfish waste as a soil amendment

INTERNAL AND EXTERNAL LINKAGES

- Animal Science Unit within the College of Agricultural, Family and Consumer Sciences

- The College's Plant and Soil Unit

- Human Nutrition and Foods area within the college and the Division of Family and Consumer Sciences at Texas A&M University

TARGET AUDIENCES:

- Animal, Plant and Soil Science Research Communities

- Extension specialists who have responsibility for packaging and disseminating information to end-users

- Agricultural producers from Louisiana and surrounding states

PROJECT DURATION:

Intermediate - 5 years

ALLOCATED RESOURCES:

Human: Scientist Years - .43
Technical and Administrative Support - 2.22

Fiscal: Approximately $146,962 will be allocated annually to support this project. Expenses include salaries, fringe benefits, student labor, materials and supplies, travel, contractual services and equipment

PROJECT 2: Hormonal Control of Rabbits

PERFORMANCE GOALS:

- Increase the profitability and efficiency of rabbit production

OUTPUT INDICATORS:

- Research reports to the scientific community, technical reports and workshops for rabbit producers and the general public

- Peer reviewed materials (conference papers, books, book chapters, reports and other materials) produced and disseminated

OUTCOME INDICATORS:

- Increase numbers of producers adopting interventions as well as changes in the numbers of fryer rabbits and income from their rabbit enterprises

KEY PROJECT COMPONENTS

- Components of this research project comprise studying the daily hormonal profiles of pregnant rabbits around the time of nest building and kindling.

Hormones of special interest include prolactin, B-endorphin, prolactin and dopamine. Other components include interventions to increase kit survival for increased production rabbit meat.

INTERNAL AND EXTERNAL LINKAGES

- The work from rabbit meat will be carried out in cooperation with food scientists from the Division of Family and Consumers Sciences and meat scientists from the animal science programs at Southern University and Louisiana State University

TARGET AUDIENCES

- This research is directed to a number of audiences. It is directed to the research community involved in similar work. It could be helpful to extension agents for packaging and dissemination to users. And finally, rabbit producers.

PROJECT DURATION:

Intermediate - 5 years

ALLOCATED RESOURCES

Human: Scientists years - 1.00
Technical and administrative support - 1.22

Fiscal: Approximately $118,923 will be allocated annually. Expenses include salaries, fringe benefits, travel materials and supplies, student labor and equipment

PROJECT 3: Value-Added Product Development

PERFORMANCE GOALS:

- Extract oat gum from oat bran, to investigate the physicochemical properties of oat gum and starches, to utilize these hydrocelloids in formulation and development of value-added meat products from rabbit and goat, and to determine the chemical, physical and sensory properties of the meat products

- Purify rabbit, goat and beef hearts by the aqueous process to produce defatted powdered rabbit, goat and beef heart muscle proteins for utilization in value-added meat products, and to investigate the physicochemical, subjective, hydration and gelation properties of the meat products

- Utilize stabilizers in the formulations and development of value-added meat products from rabbit and goat, and to quantify the physicochemical and sensory properties of the meat products

OUTPUT INDICATORS:

- Research reports to the scientific community, technical reports for consumers and the general public

- Peer reviewed materials (conference papers, books, book chapters, reports, and other materials) produced and disseminated

OUTCOME INDICATORS:

- Development of value-added goat and rabbit products

KEY PROJECT COMPONENTS:

- Three components are presented for this research. First, Oat Gum/Beta Glycan will be extracted from oat bran. Secondly, ground meat (rabbit and goat) combined with varying levels of oat gum and oat trim will be formulated into nuggets and patties. Thirdly, sensory analysis will be

conducted on products developed according to flavor, juiciness, tenderness, and overall palatability.

INTERNAL AND EXTERNAL LINKAGES

- This investigation is multidisciplinary involving the food and nutrition areas at the University and the animal sciences unit within the College. Collaboration also involves the Department of Animal Science at Louisiana State University and the Louisiana Department of Agriculture.

TARGET AUDIENCES:

- Small-agricultural producers: Results of this study have potential for enhancing the incomes of small agricultural producers nation wide providing markets are established. Consumers of Formulated Products: Results of the investigation could impact those consumers who consume non-traditional meat and meat products. The northwest and southwest regions of the United States are popular areas where goat meat consumption is on the increase. Food Industry: Results of this investigation could lead to the establishment of wholesale and retail market development. This potential market development could enhance rabbit and goat production among small agricultural producers.

PROJECT DURATION

Short-term - 3 years

ALLOCATED RESOURCES

Human: Scientist years - .12
Technical and administrative support - 1.0

Fiscal: Approximately $93,889 will be allocated to this project annually. Expenses include salaries, fringe benefits, student labor, travel, materials and supplies and contractual services.

PROJECT 4: Container Crop Production for Horticultural Crops

PERFORMANCE GOALS:

- Evaluate growth and physiological characteristics of hibiscus (Hibiscus rosa-sinensis) and fiscus (Fichus Salidcifolia) in response to fertilizer, irrigation and growing substrate in different management systems

- Determine the media, fertilizer, irrigation combination most favorable to production of these crops without sacrificing quality

OUTPUT INDICATORS:

- Research reports to the scientific community, technical reports for producers and general public

- Peer reviewed materials (conference papers, books, book chapters, reports and other materials) produced and disseminated

OUTCOME INDICATORS:

- Improve the quality of crops

- Reduction in pollutants to crops

KEY PROJECT COMPONENTS

- The three components of the container crop production are: 1) studying the influence of fertilizer formulation and irrigation methods on the performance and growth of hibiscus and fichus, 2) studying the physiological growth response of fichus to growing media and fertilizer rates, and 3) studying the impact of irrigation regimes, and growing media on the growth and phipiology of hibiscus

INTERNAL AND EXTERNAL LINKAGES

- The investigations are from the College of Agricultural Family and consumer Sciences. The activities that will be conducted require expertise in plant physiology, soil and water management, and container production systems. The project is specifically designed to utilize the expertise of scientists who are presently involved in water and soil

management, greenhouse crop production systems and environmental and plant physiology. Installation of the irrigation system, water monitoring and analyses, soil water potential, shoot ration, dry matter, tissue analysis, soil pH, electrical conductivity and water monitoring are the multidisciplinary activities to be undertaken by the project.

TARGET AUDIENCES

- The container crop industry is targeted for the results of this project. The targeted audiences include commercial container crop operators, scientists and other professionals with close association with the industry. Garden center, research institutions, extension agents and consumers of such commodities will be audiences that are targeted and who will benefit from the investigation.

PROJECT DURATION:

Short-Term - 3 years

ALLOCATED RESOURCES:

Human: Scientist years - 1.00

Technical and Administrative Support - .72

Fiscal: Approximately $113,442 will be allocated to this project annually. Expenses include salaries, fringe benefits, student labor, travel and material and supplies.

PROJECT 5: EVALUATION OF KENAF CROPS

PERFORMANCE GOALS:

- Evaluate the potential of growing kenaf as an alternative roughage source for animal production

OUTPUT INDICATORS:

- Research reports to the scientific community, technical reports for

agricultural producers and the general public

- Peer reviewed materials (conference papers, books, book chapters, reports, and other materials) produced and disseminated

OUTCOME INDICATORS

- Improved cultural practices

- More efficient and effective use of agricultural chemicals

KEY PROJECT COMPONENTS:

- Components of this research involve: 1) selection of high yielding cultivar of kenaf and determine its agronomic responses in terms of row width, planting density, planting dates and nitrogen fertilizer requirement, 2) studying ratooning (regrowth after harvest of kenaf as a sustainable forage crop, and 3) studying growth performance of goats grazed on kenaf.

INTERNAL AND EXTERNAL LINKAGES:

- The project will utilize internal and external linkages. The linkages exist within the Animal Science unit and the Southern University Cooperative Extension Program. External linkage with the Louisiana Agricultural Experiment Station, Louisiana State University and other land grant institutions will be established. The existing relationship with USDA/ARS scientists stationed at the LSU campus will be strengthened.

TARGET AUDIENCES:

- Agricultural extension agents, goat farmers, small farmers or part-time farmers.

PROJECT DURATION:

Intermediate - 5 years

ALLOCATED RESOURCES

Human: Scientist Years - 1.25
Technical and Administrative Support - 2.22

Fiscal: Approximately $183,668 will be allocated to this project annually. Expenses include salaries, fringe benefits, student wages, travel, contractual services, and material and supplies.

SUMMARY OF COST ESTIMATES FOR THE PLANT AND ANIMAL PRODUCTION SYSTEMS RESEARCH PROGRAM

NATIONAL GOAL 1: To achieve and agricultural system that is highly competitive in the global economy.

Projected Cost of Research Program over Five Years

FY	Evan-Allen	State Match	Total

2000	$656,874	-0-	$656,874
2001	656,874	$295,593	952,467
2002	656,874	328,437	985,311
2003	656,874	328,437	985,311
2004	656,874	328,437	985,311
TOTAL	$3,284,370	$1,280,904	$4,565,274

NOTE: A request is submitted to waive the state match for fiscal year 2000. A match of 45% is required for FY 2001 and 50% for FY 2002 and beyond.

Projected Human Resources for Research Program over Five Years

FY	Scientist Years	Technical Support

2000	3.95	8.10
2001	5.51	11.75
2002	9.26	17.62
2003	9.26	17.62
2004	9.26	17.62
TOTAL	37.09	72.71

NOTE: Compilations are based on state match of 45% of beginning fiscal year 2001 and 50% for fiscal year 2002 and beyond.

NATIONAL GOAL 3: To achieve a healthier, more well nourished population

PROGRAM 2: Human Nutrition, Health, Family and Consumer Sciences Research Program

STATEMENT OF ISSUES: The face of rural America is changing, and so is the family. Many of the problems in the rural areas are related to poverty. Small farm families in the South are the most deprived. In Louisiana the number of families below poverty level is over 36% in some rural areas. Such families have persistently low income and are characterized by high infant mortality rates, high incidence of teenage pregnancy, and large numbers of female-headed households. These families also face many other problems ranging

from health and nutrition to family relations and youth delinquency.

Diet and health are linked, and good nutrition is a key preventive health measure. Five of the leading causes of death in the United States have been associated with diet. These include coronary heart disease some type of cancer, stroke, diabetes, mellitus, and hypertension. Dietary excesses of imbalances also contribute to other problems, such as high blood pressure, obesity, dental diseases, osteoporosis, and gastrointestinal diseases. Together, these conditions related to diet impose substantial illness on Americans. In Louisiana, rates of rural poverty, minority poverty, infant mortality, low birth-weight infants, and low births on teen mothers are among the nation's highest.

Obesity, a risk factor in all leading causes of death, affects 30% of women, 15% of men and 25% of adolescents, with highest rates observed among low-income and minority groups. Nearly 50% of African-American women are overweight. Louisiana is among the top states in the United States with obesity problems among the population.

The goal of this research program, then, is to generate research results that can be used to address issues to enhance the quality of life in rural Louisiana.

While three research projects are on-going, areas of research focus over the

next several years include, but are not limited to:

a. Nutritional health and well-being among niche clientele groups

b. Wholesome family life among niche clientele groups

c. New food products for improving human nutritions as for enhancement of health

d. Family resource management, including time, money and human capital

e. Family and work/business relationships

f. Effect of textiles (value-added) and apparel on human and business enterprise development

g. Developing and evaluating textile products for functional characteristics to meet consumer needs, aesthetics, and preferences

The human nutrition, health, family and consumer sciences research program is guided by issues described above. Two research projects are included as part of the program and they are presented according to the format established by CSREES:

PROJECT 6: Obesity Among African American Women

PERFORMANCE GOALS:

- Investigate the relationship between obesity, fat patterning and metabolic markers of disease in young African American women.

OUTPUT INDICATORS:

- Research reports to the scientific community, technical reports and workshops for young African American women and the general public

- Presentation of recommended nutritional practices as a result of investigation

- Peer reviewed materials (conference papers, books, book chapters, reports and other materials) produced and disseminated

OUTCOME INDICATORS

- Increased number of young African American women adopting recommended nutrition practices

- Enhanced awareness of the relationship between obesity, fat patterning and metabolic markers of disease among young African American women and the general public

KEY PROJECT COMPONENTS:

- The key components of the investigation are: 1) studying the relationship between obesity, fat patterning and metabolic markers of disease in young African-Americans, and 2) developing culturally sensitive nutrition interventions strategies armed at lowering the overall prevalence of obesity in young adults to prevent obesity related morbidity and mortality in middle and older ages

INTERNAL AND EXTERNAL LINKAGES:

- The investigation is multi-disciplinary. Contributions are provided from psychology, nursing and physical education

TARGET AUDIENCES:

- The target audience for this investigation is young African-American women. Changing health hazards occur during the years 15 to 24. Young people develop behavior that becomes permanent. Most of the risk factors for chronic disease in later years have their roots in youthful behavior.

PROJECT DURATION

Intermediate - 5 years

ALLOCATED RESOURCES:

Human: Professional Scientist years - .312
Technical and Administrative Support - 2.07

Fiscal: Approximately $116,463 will be allocated to the project annually. Expenses include salaries, fringe benefits, student wages, travel, materials and supplies, professional and contractual services

PROJECT 7: Textile materials Development (A Regional Project)

PERFORMANCE GOALS

- Assess the performance of Exxaire (a noel non-woven protective fabric)

- Assess consumer awareness and market potential of new value-added fibers and textile products from non-traditional sources and describe intervention adoption patterns of new textile products among consumers

- Assess the performance of sewn apparel products from kenaf fiber

OUTPUT INDICATORS

- Research reports to the scientific community, technical reports for consumers and the general public

- Peer reviewed materials (conference papers, books, book chapters, reports and other materials) produced and disseminated

OUTCOME INDICATORS

- Improved kenaf fabrics and products

KEY PROJECT COMPONENTS:

- The primary components of the project involve studying the performance of Exxaire (a novel non-woven protective fabric) and apparel products from kenaf. Additionally, assessment of consumer awareness and market potential of new value-added fibers and textile products from non-traditional sources is a recognized component of the project.

INTERNAL AND EXTERNAL LINKAGES:

- The project is a regional project and is collaborative in nature. The Universities collaborating in related research are as follows: 1) Southern University and A&M college, 2) Mississippi State University, 3) Louisiana State University, 4) University of Nebraska, 5) University of Kentucky, 6) Kansas State University, 7) Purdue University, 8) University of Wisconsin-Madison, 9) Auburn University, 10) University of Tennessee at Knoxville and 11) University of Arkansas, Fayetteville

TARGET AUDIENCES:

- Scientific Community: These audiences will have available to them a body of theoretical knowledge pertaining to the physical and chemical structure of cellulose-based fibers.

- Consumers of Textile Products: The development of polymeric materials that are effective barriers against biological agents will benefit medial and scientific communities who deal with various body fluids and chemicals. The project will enhance the usability of the new polymeric materials by providing information on comfort and design of these products.

- Medical and Other Scientific Communities: The development of polymeric materials that are effective barriers against biological agents will benefit medical and scientific communities who deal with various body fluids and chemicals. The project will enhance the usability of the

new polymeric materials by providing information on comfort and design of these products.

- Agricultural Producers of Kenaf and Cotton: Producers growing Kenaf could enhance their income. Other potential benefits are the creation of jobs in the processing and farming industries, and the use of Kenaf in crop rotation schedules. Cotton producers will enjoy an added market. Kenaf must be blended with cotton for fiber properties that make it suitable for spinning alone.

PROJECT DURATION:

Intermediate - 5 years

ALLOCATED RESOURCES

Human: Professional Scientist years - .625
Technical and Administrative Support - .72

Fiscal: Approximately $94,057 will be allocated to this project. Expenses include salaries, fringe benefits, student labor, travel, material and supplies and contractual services

SUMMARY OF RESOURCE ALLOCATIONS FOR THE HUMAN NUTRITION, HEALTH, FAMILY AND CONSUMER SCIENCES RESEARCH PROGRAM

NATIONAL GOAL3: To achieve a healthier, more well-nourished population

Projected Cost of Research Program over Five Years

FY	Evans-Allen	State Match	Total
2000	$210,518	-0-	$210,518
2001	210,518	94,731	305,249
2002	210,518	105,259	315,777
2003	210,518	105,259	315,777
2004	210,518	105,259	315,777
TOTAL	$1,052,590	$410,508	$1,225,084

NOTE: A request is submitted to waive the state match for fiscal year 2000. A match of 40% is required beginning fiscal year 2001and 50% for FY 2002 and beyond.

Projected Human Resources for Research Program over Five Years

FY	Scientist Years	Technical Support
2000	1.03	2.79
2001	1.49	4.05
2002	2.23	6.07
2003	2.23	6.07
2004	2.23	6.07
TOTAL	9.21	25.15

NOTE: Computations are based on state match of 45% beginning fiscal year 2001 and 50% for fiscal year 2002 and beyond.

NATIONAL GOAL 4: To Achieve Greater Harmony between Agriculture and the Environment

PROGRAM 3: Urban Forestry, Resource and Environment Research Program

Statement of Issues: During the past several decades, the quality and quantity of urban and community natural resources have declined. A large portion of this decline can be attributed to the changing conditions of the urban and urban/rural interface terrestrial ecosystems because of demographic changes, and conversion from rural to urban uses, and the lack of cohesive and scientific information for the management and preservation of urban natural resources. This situation is further aggravated by the global changes that threaten our air, water and soil resources. In populations which are more concerned with environmental quality and aesthetic values in our living environment, there is an increasing demand to preserve and enhance urban forests and other natural resources. Consquently, massive tree planting activities have taken place in recent years. The resulting massive plantings may eventually be detrimental to the infrastructure of cities if sound management and preservation plans are not developed. This is particularly true in the south and southeastern United States where the economic development is on the upswing. The economic development and industrialization have given rise to elevated levels of carbon dioxide, air pollutants and particulates in our living environments. These air pollutants could subsequently and significantly result in global warming and rainfall pattern changes that pose potential problems to our urban natural resources.

Accompanied by our inability to accurately predict our future environment for urban dwellers, there is a need to develop strategic research initiatives to address the emerging issues and concerns, and the potential crisis facing the urban ecosystem. There is a need for sound land-use planning processes using state-of-the-art technology such as Knowledge-Based Expert System (IKBES), Geographic Information System (GIS) and Global Positioning System (GPS) to curb land conversion and to mitigate the damaging effects created by environmental modifications. The development of database can display spatial information and generate thematic maps for spatial and temporal analyses in critical to sound living environments. To understand our natural resource responses to global changes, air, water and soil pollution must be monitored. To alleviate these potential problems, we must rely on research based information and technology. Research emphasis will continuously be placed on natural resource management and the protection of urban forest health. The program hopes to provide innovative research information on environmentally friendly agricultural and natural resource management systems. For the past six years, the College's Urban Forestry Program has conducted to a limited extent, research on (1) the ability of selected urban trees on the removal of O_3, CO_2, No_x and particular pollutants (2) gaseous exchange of selected urban tree species, (3) the physiological responses of

selected urban tree species to flooding, soil compaction and removal, and (4) cost and benefits of urban forests.

PROJECT 8: Biotechnological Urban Tree propagation

PERFORMANCE GOALS:

- Enhance the efficiency of micropropagation with sizable media plant growth regulators
- Develop a technique to maximize shoot formation from explant for mass-micropropagation of selected urban tree species

OUTPUT INDICATORS:

- Research reports to the scientific community, technical reports for forest producers and the general public
- Peer reviewed materials (conference papers, books, book chapters, reports and other materials) produced and disseminated

OUTCOME INDICATORS

- Improved micropropagation media for urban tree species (Live oak and Southern Magnolia)
- Development of best combination and concentration of growth regulators for micropropagation of urban tree species
- Production of most suitable explant for urban tree species

KEY PROJECT COMPONENTS:

- The urban tree species to be used in this research are live oak (Quercus Virginia) southern magnolia (Magnolia Grandeflorc). These tree species

are valuable landscape tree species in the Southern U.S. which exhibit sexual and/or asexual propagation problems.

- The research involves invitro germination, embryo culture, ovale culture, feral culture, tip, bud and leaf cultures and microcuttings. Several surface-sterilization and media protocols in combination with growth regulators will be assessed for effectiveness. Morphological features of the shooting/rooting process will be examined using light and electron microscopy. Photosynthesis, respiration, transportation, stomatal conductance and distribution of invitro plants will be evaluated. This project intends to establish specific miropropagation techniques for the species that are not readily propagated through conventional methods.

INTERNAL AND EXTERNAL LINKAGES:

- The implementation of this project draws on expertise from the strength of the urban forestry faculty and other units within the College and outside. Project collaboration involves research scientists in disciplines such as urban forestry, biotechnology, plant breeding, tree physiology, morphology, anatomy, and statistics

TARGET AUDIENCES:

- This research is directed to the research communities to include biotechnology, plant breeders, horticulturists, physiologist, botanist and private industry representatives.

PROJECT DURATION

Intermediate - 5 years

ALLOCATED RESOURCES

Human: Scientist years - .625
Technical and Administrative Support - .72

Fiscal: Approximatley $95,139 will be allocated annually to this project. Expenses include salaries, fringe benefits, student labor, travel and material and supplies

PROJECT 9: Community Forestry

PERFORMANCE GOALS:

- Identify indicators for measuring the effectiveness of educational programs in urban forestry

- Develop a compendium of educational programs in urban and community forestry, measure and evaluate the public's perception of preserving urban forests

OUTPUT INDICATORS:

- Research reports to the scientific community, technical and non-technical reports to the general public

- Peer reviewed materials (conference papers, books, book chapters, reports and other materials) produced and disseminated

OUTCOME INDICATORS:

- Effective educational programs in urban forestry

- Compendium of education programs in urban and community forestry

- Positive attitude of the general public toward preserving urban forests

KEY PROJECT COMPONENTS:

- A survey will be conducted of cities in seven southern states identified from HUD's model cities. The Survey will be developed and divided into sets of questions covering general topics including, but not limited to organizational type, types of educational programs, activities of each program, attendance, advertising tools and post-program evaluations. Survey responses will be analyzed using categorical data analysis, ANOVA, and mean difference test. Regression analysis will also be used in data analysis.

INTERNAL AND EXTERNAL LINKAGES:

- Center for social Sciences Research, Southern University
- Louisiana State Forestry Service, Louisiana Urban Forestry Council

TARGET AUDIENCES:

- USDA Forest Service, local governments, state forestry agencies, non-governmental organizations, commercial businesses related to tree planting, care and maintenance, horticulture and landscaping

PROJECT DURATION:

Intermediate - 3 to 5 years

ALLOCATED RESOURCES:

Human: Scientist years - 1.25
Technical and Administrative Support - .72

Fiscal: Approximatley $132,044 will be allocated annually to this project. Expenses include salaries, fringe benefits, student labor, travel and material and supplies.

PROJECT 10: Biological Responses of Selected Urban Tree Species

PERFORMANCE GOALS:

- Identify and quantify biological adaptation of cherrybark oak (Auercus falcata) and Water oak (Quercus Nigra) species to flooding and a range of soil compaction
- Evaluate the effect of flooding and soil compaction on soil properties

OUTPUT INDICATORS:

- Research reports to the scientific community, technical reports to forest producers and the general public

- Peer reviewed materials (conference papers, books, book chapters, reports, and other materials) produced and disseminated

INTERNAL AND EXTERNAL LINKAGES:

- Urban forestry faculty within the College

- Plant and solil sciences faculty within the College

TARGET AUDIENCES:

- Results of this project are directed toward the research community and those responsible for the care and maintenance of tree species

PROJECT DURATION

Intermediate - 5 years

OUTCOME INDICATORS:

- A relationship existed in flooding and soil compaction on cheerybark oak and wild oak

- Positive quantifiable indicators exist in the growth and physiology of cherry oak and wild oak tree species

KEY PROJECT COMPONENTS:

- Components of this research involve: 1) studying the effect of soil compaction and flooding on the growth and physiology of selected oak tree species, 2) studying ultrastructural changes of selected oak tree species, and 3) studying the effect of flooding and compaction on soil properties. A split-split plot design will be used

ALLOCATED RESOURCES

Human: Scientist years - .437
Technical and Administrative Support - .72

Fiscal: Approximately $83,139 will be allocated annually. Expenses include salaries, fringe benefits, student labor, travel and material and supplies

SUMMARY OF RESOURCE ALLOCATIONS FOR THE URBAN FORESTRY, RESOURCE AND ENVIRONMENT RESEARCH PROGRAM

Projected Cost of Research Program over Five Years

FY	Evans-Allen	*State Match	Total
2000	$310,322	-0-	$310,322
2001	310,322	139,644	449,966
2002	310,322	155,161	465,483
2003	310,322	155,161	465,483
2004	310,322	155,161	465,483
TOTAL	$1,551,610	$605,127	$2,156,737

NOTE: A request is submitted to wavie the state match for fiscal year 2000. Subsequently, a match of 45% is required for FY 2001 and 50% for FY 2002 and beyond.

Projected Human Resources for Research Program over Five Years

FY	Scientist Years	Technical Support
2000	2.31	2.16
2001	3.35	3.15
2002	5.02	4.72
2003	5.02	4.72
2004	5.02	4.72
TOTAL	20.72	19.47

NOTE: Computations are based on state match of 45% beginning fiscal year 2001 and 50% for fiscal year 2002 and beyond.

NATIONAL GOAL 5: To enhance economic opportunities and the quality of life for Americans

PROGRAM 4: Economic, Marketing, Policy and Community Development Research Program

STATEMENT OF ISSUES: Responding to changing consumer demographies and lifestyles, U.S. food processors introduced 116,800 new food products between 1986 and 1996. On average consumers are more willing to try new

and exotic foods, and several ethnic dishes have become a part of American diets. This has led some researchers to speculate that the demand for and supply of ethnic food products will continue in the future. New food products are costly to produce and promote, and the failure rate is high. Thus, market assessment studies of newly developed food products supersede speculation.

Many of the new food products addressed health concerns such as levels of fat, cholesterol, fiber and calcium. Manufacturers use new product introductions to compete for consumers. However, as shelf space becomes scarce, retailers are now charging manufacturers a fee to display their products. The proliferation of new products is in part due to the food industry's driving desire to study consumers' wants and needs. Within this competitive marketing environment, agricultural scientists have been focusing their efforts on finding viable non-traditional enterprises for small-limited resource farmers. Because the U.S. food industry is consumer-driven and about 86 percent of all new products fail, it is important to know the marketing potential of each product before recommending production.

Many residents of Louisiana are small scale farmers with low-income. These citizens tend to be less educated and unable to participate in many of the opportunities of mainstream America. They suffer economically and socially because of Louisiana's severely depressed petroleum and agricultural

industries. Overall, unemployment tend to be high, especially for minority and other under-represented population. Many of the citizens live in substandard housing and attend inadequate schools. Also, many of the more aggressive citizens continue to migrate in search for a better quality of life, leaving a group of citizens and leaders who lack preparation to deal with current issues.

Areas of focus for the economic, marketing, policy and community development research program over the next several years include, but are not limited to:

a. Study potential barriers of U.S. agricultural policy to the success of small farmers participation in the industry

b. Conduct marketing assessment of nontraditional product and enterprises

e. Study the feasibility of creating cooperatives among small-limited resource farmers

f. Study input requirements for nontraditional crops livestock and other related business enterprises

g. Study management and marketing practices of small-limited resource farm enterprises

Currently, only one research project is included in this program. It is presented below according to the format established by CSREES. Supportive issues for this project are described above.

PROJECT I : Consumption Patterns for Goat and Rabbit Enterprises

PERFORMANCE GOALS:

- Assess consumption and likely consumption of goat meat, goat cheese, goat milk, rabbit meat, rabbit nuggets and rabbit patties.

- Determine the market segments most receptive to buying goat meat, goat cheese, goat milk, rabbit meat, rabbit nuggets and rabbit patties.

OUTPUT INDICATORS:

- Consumption of and interest in consuming nontraditional products (goat meat, goat cheese, goat milk, rabbit meat, rabbit nuggets and rabbit patties) will be linked to demographic, social, economic and regional factors.

- Empirical models will identify the consumer segments to target for marketing and promotional efforts.

- Research reports to the scientific community, technical reports and workshops for producers and the general public.

OUTCOME INDICATORS:

- Positive perception of consumers toward consumption of non-traditonal meat products--goat meat, goat cheese, goat milk, rabbit meat, rabbit roasts, rabbit nuggets, and rabbit patties.

- Identification of market segments receptive to buying non-tradional meat products.

KEY PROJECT COMPONENTS:

- The study falls within one of the program components-Economics, markets, Policy, and Community Development--identified for research by southern University's College of Agricultural, Family and Consumer Sciences.

INTERNAL AND EXTERNAL LINKAGES:

- The principal investigator has worked closely with her colleagues in Animal Sciences and Foods and Nutrition in developing this project. In addition to the survey, the food scientists have been conducting sensory analyses to determine consumers' ratings of rabbit meat, roasts, nuggets, and patties, and goat-meat hamburgers. These results will help to determine the extent to which viable markets exist for these products. We will readily share all the study's results with colleagues, farmers, the United States Department of Agriculture, and with state agencies.

TARGET AUDIENCES:

- The target audiences are small farmers, extension agents, the state and federal departments of agriculture, and food marketing firms. Additionally, the research community is another target audiences for the research.

PROJECT DURATION:

- Long-Term--more than five years. Although approved in fiscal year 1995-96, no funds were allocated for the consumer survey (a key component of the project) until 1997-98 fiscal year. Because of the volume of information generated by the survey, two to three years will be needed to analyze data and disseminate results.

ALLOCATED RESOURCES:

Human: Professional Scientist Year - .625
Technical and administrative support - 1.72

Fiscal: Approximatley $117,853 will be allocated to this project annually. Expenses include salaries, fringe benefits , student wages, travel and material and supplies and contractual services.

NATIONAL GOAL 5: To enhance economic opportunities and the quality of life for Americans.

Projected Cost of Research Program over Five Years

FY	Evans-Allen	*State Match	Total
2000	$117,853	- 0 -	$117,853
2001	117, 853	$53,034	170,887
2002	117,853	58,926	176,779
2003	117,853	58,926	176,779
2004	117,853	58,926	176,779
TOTAL	$589,265	$229,812	$819,077

NOTE: A request is submitted to waive the state match for fiscalyear 2001 and 50% for fiscal year 2002 and beyound.

Projected Human Resources for Research Program over Five Years

FY	Scientist Years	Technical Support
2000	.62	1.72
2001	.90	2.49
2002	1.35	3.73
2003	1.35	3.73
2004	1.35	3.73
TOTAL	5.57	15.40

NOTE: Computation are based on state match of a 45% beginning fiscal year 2001 and 50% for fiscal year 2002 and beyound.

SUMMARY OF ALLOCATED RESOURCES FOR RESEARCH PROGRAMS BY APPLICABLE NATIONAL GOALS OVER FIVE YEARS

National Goal	EVANS-ALLEN	State Match	Total
1	$3,284,370	$1,280,904	$4,565,272
3	1,052,590	410,508	1,463,098
4	1,551,610	605,127	277,182

5	589,265	229,812	819,077
GRAND TOTAL	$6,497,835	$2,526,351	$9,004,186

NOTE: A request is submitted to waive the state match for fiscal year 2000. A match of 45% is required beginning fiscal year 2001 and 50% for fiscal year 2002 and beyond.

SUMMARY OF HUMAN RESOURCE ALLOCATIONS FOR RESEARCH PROGRAMS BY NATIONAL GOAL OVER THE YEARS

National Goal	Scientists Years	Technical Support
1	37.09	72.71
3	9.21	25.15
4	20.72	19.47
5	25.57	15.40
TOTAL	92.59	132.73

NOTE: A request is submitted to waive the state match for fiscal year 2000. A match of 45% is required beginning fiscal year 2001 and 50% for fiscal year 2002.

I. STAKEHOLDER INPUT PROCESS

Various approaches have been used with three recognized stake holder groups: 1) individuals who generate research information (the researcher); 2) persons who disseminate research oriented information (change agents); 3) and individuals who use research information (agricultural producers).

Recently, individuals engaged in research at the University were asked to participate in a one-day meeting, where critical issues facing the state of Louisiana were discussed. Discussions led to be the identification of a number of issues researchers perceived to be important and warrant enhanced research studies over the next several years. Further, this group identified ways and means of engaging stake holders in the future. They were; 1) town meetings, 2) surveys, 3) workshops, 4) secondary data, 5) demonstrations, fields, and advisory committees, 6) site visits, and 7) professional meetings. As part of the College's Small Farm Initiative, two town meetings were held with agricultural producers served by our program. The final approach involved change agents. A sample of Louisiana Extension agents provided input on critical issues experienced by niche clientele groups in their communities through a survey. They were asked to identify critical issues in the areas of

agriculture and natural resources; nutrition, family and consumer sciences; community and youth development; and workforce preparedness. Results of these procedures will be presented as College publications for dissemination and use in future

research program decision-making. These procedures and others will be on-going processes over the five-year period.

III. PROGRAM REVIEW PROCESS

A. Merit Review

B. Scientific Peer Review

All research projects prepared for Evans-Allen Funding consideration and all other projects proposed for the College are subjected to a scientific peer review process. A Research Review Committee within the College operates as a Standing Committee to review proposals consistent with agency guidelines; University and College policies and procedures; and established criteria if different from those of an agency.

Procedurally, interested faculty prepares a proposal request which is reviewed and endorsed by discipline peers. The proposal then is submitted to the divisional chair who endorses it and transmits it to the chair of the Research Review Committee for further action. Committee members within and outside of the College are selected to review

proposals based on expertise, experience and strength in related disciplines. Pre and Post award procedures are handled by the Research Directors and Associates.

IV. MULTISTATE RESEARCH ACTIVITIES

The College participates in one multi-state research initiative as described below:

Title: Development of Textile Materials of Environmental Compatibility and Human Health Safety

Project Number: Regional Project S-272

Participants include:

Southern University and A&M College
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