

**MEETING THE CHALLENGES FOR THE NEW MILLENNIUM  
STRATEGIC PLAN  
1999-2004**

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AGRICULTURAL RESEARCH

**Submitted To:**  
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**TABLE OF CONTENTS**

Introduction .....	1
Relation of projects to the five federal national goals:	
<b>Goal 1</b>	
An agricultural system that is highly competitive in the global economy .....	1
<b>Program 1.1</b>	
Sustainable alternative vegetable production for low -income rural dwellers in the Mississippi Delta .....	1
<b>Program 1.2</b>	
Influence of litter type on incidence of breast blisters and foot problems in broilers .....	2
<b>Program 1.3</b>	
Effects of nutrition and suckling on the release of reproductive hormones in cattle .....	2
<b>Program 1.4</b>	
Analysis of the economic performance of small farm marketing strategies .....	2
<b>Program 1.5</b>	
Evaluation and development of farm management and risk reducing strategies for small agricultural producers .....	2
<b>Goal 2</b>	
A safe and secure food and fibers system .....	3
<b>Goal 3</b>	
A healthy, well-nourished population .....	3
<b>Program 3.1</b>	
Development of low -fat, low -cholesterol soybean recipes .....	3
<b>Goal 4</b>	
An agricultural system which protects natural resources and the environment .....	3

<b>Program 4.1</b>		
Low-input sustainable production of fruits and nuts as alternative crops for small farmers .....		4
<b>Goal 5</b>		
Enhanced economic opportunity and quality of life for Americans .....		4
<b>Program 5.1</b>		
Rural labor markets in the global economy .....		4
<b>Program 5.2</b>		
A model forest products processing to enhance the economic development of Jefferson County, Mississippi .....		4
Other: Administration of Research .....		5
Other required components .....		5
1. Identification of critical agricultural issues .....		5
2. The process of consultation with stakeholders .....		6
3. The efforts made to identify and collaborate with other colleges and universities .....		7
4. The manner in which research and extension will cooperate .....		7
5. For extension plans, the education and outreach plans already underway .....		9
6. Process for receiving stakeholder input .....		9
7. A merit review process .....		9
8. A scientific peer review process .....		10
9. A report of multi state and integrated research and extension programs .....		10
Measurement of Program Impact .....		10
Addenda .....		11

1.	In-house peer review process .....	11
	Approval Form .....	12
2.	Table of human and financial resource needs as projected for the next five years .....	13

## **PLAN OF WORK**

### **Alcorn State University**

#### **Agricultural Research**

July 15, 1999

#### **Introduction:**

Alcorn State University, the nation's oldest historically Black land - grant university, was established in 1871 in the rolling hills of southwest Mississippi near the Mississippi River. The research efforts of the university began in earnest in 1969 with a grant of \$5,000 from the USDA to study production of sweet sorghum. Today, thirty years since 1969, the research program receives \$1,638,091 for Federal Formula Funds research (Evans - Allen) and over \$2,000,000 from other sources to support research efforts. It is within the scope of this plan to report only on those projects receiving formula funding. These are nine in number. There is also a separate budget for administrative support as allowed by law.

#### **RELATION OF PROJECTS TO THE FIVE FEDERAL NATIONAL GOALS:**

**Goal 1: An Agricultural system that is highly competitive in the global economy.**

#### **Situation:**

In a global economy where large corporate farms and multi - national corporations dominate, small farmers are struggling to maintain their share. Today in the U.S., twenty percent of farms and ranches account for eighty percent of the gross farm income, yet eighty percent of the farms divide the remaining twenty percent of revenue. It is the role of agricultural research at Alcorn State University to reach out to these limited - resource, small producers and assist them, through problem - solving research, to maintain or even increase their share of agricultural income. The programs listed below are designed to address such specific issues.

**Program 1.1**                      Sustainable alternative vegetable production for low - income rural dwellers in the Mississippi Delta (MISX 1263)

**Key Program Components :**

- ◆ Comparison of cultural practices for various crops, such as Chinese melon, shiitake mushroom, cayenne pepper, and others
- ◆ Development of harvesting and handling procedures to ensure crop quality
- ◆ Study market demands for alternative crops

**SY:** 0.13  
**TY:** 1.5

**Budget:** \$43,340

**Program 1.2** Influence of litter type on incidence of breast blisters and foot problems in broilers (MISX-3004)

**Key Program Components:**

- ◆ Reduction of incidence of breast blisters and foot problems
- ◆ Effects of litter type on feed efficiency and average daily gain of broilers

**SY:** 0.24  
**TY:** 1.00

**Budget:** \$39,597

**Program 1.3** Effects of nutrition and suckling on the release of the reproductive hormones in cattle (MISX-3005)

**Key Program Components:**

- ◆ Determine nutritional, hormonal, and neuronal interactions which enhance reproductive efficiency
- ◆ Apply newly-developed knowledge of physiology to optimize production efficiency

**SY:** 0.5  
**TY:** 1.0

**Budget:** \$90,909

**Program 1.4** Analysis of the economic performance of small farm marketing strategies (MISX -4802)

**Key Program Components :**

- ◆ Enumerate different marketing strategies available to producers
- ◆ Survey of producers' marketing strategies and approach
- ◆ Analyze increases in income brought about by improved marketing skills

**SY:** 0.6  
**TY:** 2.0

**Budget:** \$96,579 Federal

**Program 1.5** Evaluation and development of farm management and risk reducing strategies for small agricultural producers (MISX -4201)

**Key Program components :**

- ◆ Evaluate current farm management practices of Mississippi small farm operators
- ◆ Develop better risk reduction strategies that may strengthen socioeconomic conditions and competitiveness of small farms in the state

**SY:** 0.2

**Budget:** \$79,863

**TY:** 1.0

**Goal 2:** A safe and secure food and fiber system

**Situation:**

No programs under this goal.

**Goal 3:** A healthy, well-nourished population

**Situation:**

Today, the average American family spends a smaller portion of disposable income on food than ever before. The quality and quantity of food available to the consumer has never been as great as it now is. Social welfare programs have made this bounty available to almost all Americans, yet many consumers lack the knowledge of how to select and prepare the variety of foods needed for a healthy, balanced diet. Nutritional problems seem to be greatest among the very young and very old. Ethnic minority groups experience more nutritional and health problems than does the ethnic majority. Our research targets such problems found in the populace of this region as the following program demonstrates.

**Program 3.1:** Development of low-fat, low-cholesterol soybean recipes (MISX -2303)

**Key Program Components :**

- ◆ Determine consumer preferences for red meat alternatives
- ◆ Conduct organoleptic testing of proposed recipes

**SY:** 0.25

**Budget:** \$79,863

**TY:** 1.0

**Goal 4:** An agricultural system which protects natural resources and the environment

**Situation:**

The environment is made up of the sum total of all natural resources, the major resources being soil, air and water. Use of these resources for the production of consumable goods and energy can have either a negative or positive impact on the environment. It is the role of research to promote such positive impacts by developing sustainable practices and alternatives to methods now in use which cause

negative impacts. Past experience has shown that levels of production can be maintained in almost every case with an integrated system of alternative, sustainable practices. Our research examines practices currently in use to determine their environmental impacts, whether positive or negative, and seeks to develop positive alternative practices.

**Program 4.1** Low-input sustainable production of fruits and nuts as alternative crops for small farmers (MISX-1012)

**Key Program Components:**

- ◆ Determine the best management practices for several fruit and nuts species which protect the environment, lower cost of production, and maintain levels of production and profitability
- ◆ Develop harvest and post-harvest handling techniques which minimize labor and other inputs

**SY:** 0.42

**Budget:** \$81,883

**TY:** 1.0

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

**Situation:**

While we are experiencing the longest period of sustained economic growth in our nation's history, this growth has not often extended to those who are on the lowest rungs of the economic ladder. Those who live at or below the poverty level have a quality of life that would be almost foreign to most middle- and upper-income Americans. It is only through new and enhanced economic opportunities that these bottom-tier citizens can move up to share in the bounty of America. Research can promote such opportunities through examination of current conditions and development of new products and processes of value which would create employment opportunities as well as greater demands for basic raw products.

**Program 5.1:** Rural labor markets in the global economy (MISX-4008)

**Key Program Components:**

- ◆ Categorize the different types of labor needs
- ◆ Studies to quantify skills available in the labor pool
- ◆ Predict trends for future labor needs

**SY:** 0.25

**Budget:** \$54,926

**TY:** 1.0

**Program 5.2** A model forest products processing to enhance the economic development of Jefferson County, Mississippi (MISX-4301)

**Key Program Components:**

- ◆ To develop an input -output industrial model designed to increase the competitive positions of rural counties surrounding the institution
  - ◆ To design a rural industrial development “ *master plan*” to implement the model
  - ◆ To establish a “ *model processing*” research laboratory to simulate practice forest product processing methods in support of the model
  - ◆ To disseminate the research finding to potential industry start -ups
- SY:** 2.1 **Budget:** \$88,409  
**TY:** 3.0

**Other:** Administration of research supported by Section 1445, PL 95 - 113 funds (MISX-0001)

**Key Program Components:**

- ◆ Salary, travel, and fringe benefit support of support staff (non -scientist, non-technical)
  - ◆ Support of overhead costs to the university
- SY:** N/A **Budget:** \$1,039,825  
**TY:** N/A

**Other Required Components**

1. Identification of critical short -term, intermediate and long -term agricultural issues in the state and current and planned research programs/projects targeted to address these issues.

A. **Short-term issues**

(1) Historic current low prices for major crops (approach: develop alternative crops - programs 1.1 and 4.1 and improve marketing strategies - programs 1.4 - Future projects- value added processing of products.)

(2) Drought stress of crops (approach: moisture conserving tillage and mulch practices as used in program 1.1 Future projects - study water - conserving methods of irrigation.)

(3) High unemployment rate in immediate region (approach: study rural labor patterns (program 5.1) and develop more uses for abundant forest products (program 5.5) Future projects: study transportation issues and educational issues as related to industrial needs and quality of workforce.)

A. **Intermediate issues**

(1) Ascendency of poultry and forestry to leading positions in Mississippi agriculture (approach: study issues related to these commodities (programs 1.2 and 5.2). Future projects: alternative poultry species, safe handling of poultry products, economics of



timber production for small landowners.)

(2) Improving farm management skills (approach: study current conditions; collect baseline data, test and recommend alternative management approaches - (program 1.5) Future projects: develop user-friendly computer software for limited resource farmers; get input from lending agencies on risk management.)

A. **Long-term issues**

(1) Quality of life of rural residents (approach: better health by improved nutrition (program 3.1) increased employment opportunities (programs 5.1 and 5.2) Future projects: study nutritional needs and nutritional intervention of rural children and rural elderly, especially targeting minority population.)

(2) Protection and improvement of the environment (approach: develop sustainable, alternative crop production practices which conserve natural resources - (program 4.1). Future projects: water quality studies and wetland restoration in alluvial areas adjacent to the Mississippi River.)

(3) Improved reproductive rates in livestock (approach: study hormonal/nutritional/physiological interactions which have positive effects on bovine reproduction - (program 1.3) Future projects: study hormonal/nutritional/physiological interactions in goats; include biotechnology techniques in efforts to enhance reproductive capacity of ungulates.)

(4) Development of aquaculture enterprises for limited resource farmers. (approach: no current programs). Further project may include (a) water quality improvement of catfish (b) commercial production of sturgeon or other alternative species (c) value added processing of aquatic species.)

2. The process established to consult with stakeholders regarding the identification of critical agricultural issues in the state and the development of research projects targeted to address the issues.

The following are practiced in meeting this requirement:

A. Consultation with extension personnel who meet with producers and rural residents on a regular basis. Extension personnel hold "town meetings" to get stakeholder input and consequently give feedback to their research counterparts

A. Stakeholders are brought to research sites for direct interaction with scientists. This may be an event such as a field day or a less formal occasion.

- A. Input from public officials. Many elected and appointed public officials serve as intermediaries between their constituents and the university. On a number of occasions, they have called attention to existing problems which were then addressed by research scientists.
- A. Input from employees of other USDA agencies. A somewhat collegial relationship exists between university scientists and employees of many USDA agencies who are also scientists or who possess a science background. Interchanges between these persons give helpful insights into research opportunities and have led to establishment of joint efforts in a number of cases, although few of these have received formula funding.
3. The efforts made to identify and collaborate with other colleges and universities that have a unique capacity to address the identified agricultural issues in the state and the extent of current and emerging efforts (including regional and multi state efforts) to work with those other institutions.
- C. Collaboration with Mississippi State University on a number of capacity building projects and on program 4.1.
- D. Collaboration with the University of Mississippi and the University of Southern Mississippi on state-funded research (\$1.5 million) to study medicinal and industrial crops as alternatives to traditional crops.
- E. Two regional projects, recently terminated, with other 1890 institutions, (1) soybeans for human food use; and (2) nutrition of rural Southern elderly.
- F. One regional project in progress with 1862 institutions.
- G. Collaboration with the University of Nebraska at Lincoln through a memorandum of understanding to develop a biotechnology research program and to engage in scientist exchange.
- H. Current negotiations with Colorado State University about collaboration on a capacity building grant proposal for FY 2000.
- I. Current negotiations with several other 1890 institutions relative to the development of two new regional projects, (1) goat production and (2) medicinal plants.
4. The manner in which research and extension, including activities funded other than through formula funds, will cooperate to address the critical issues in the state, including the activities to

be carried out separately, sequentially or jointly.

For purposes of reporting in this section, no differentiation is made between sources of funds; the end-goal is the same: to better serve the clientele through extension and/or research activities. Research and extension personnel at Alcorn State University have an excellent track record of cooperation. The following are a representative sample of cooperative efforts which serve our public's needs:

**Program/Location**

**Classification of Activities**

Annual Field Day

Joint effort to present meaningful programs and demonstrations to approximately 1500 attendants yearly.

Off-Campus Center  
Mound Bayou

Extension offers demonstration of vegetable production, harvest, and post-harvest handling; research conducts varietal trials of vegetables on that soil type.

Off-Campus Center - Preston

Extension trains would-be producers in vegetable production and marketing; research conducts varietal trials of vegetables on that soil type.

Development of Southeastern  
States Goat Marketing Cooperative

Research and extension personnel jointly met with goat producers and potential producers to assist them in the legal formation of a marketing cooperative. Research personnel conducted on-farm research about goat health issues. Extension personnel assisted with finance plans for the cooperative. The end-result is an average of 600 goats per week now being marketed through the cooperative.

Development of Golden  
Pig Cooperative

Research and Extension personnel jointly met with swine producers and potential producers to assist them in the legal formation of a production and marketing cooperative. Extension personnel seek to assist the cooperative in securing financing while research personnel have remodeled and repaired facilities to lease to the cooperative.

Research personnel have also developed a swine artificial insemination program for the benefit of cooperative members and have made excess, high-quality breeding stock available to them at reasonable prices.

5. For extension plans, the education and outreach programs already underway to convey available research results that are pertinent to a critical agricultural issue .....

Not applicable to Research Plan of Work.

6. Process for receiving stakeholder input on the use of agricultural research, extension and education formula funds, including 1994 land grant institutions.

Generally, the same processes reported in the section for Required Component 2 are applicable to this section.

7. A merit review process for extension programs funded under sections 3(b)(1) and (c) of Smith-Lever Act and under Section 1444 of NAREPTA, and for research programs funded under sections 3(c)(1) and (2) of the Hatch Act and under Section 1445 of NAREPTA.

A comprehensive on-site review lasting for several days has been conducted a number of times in the past. These reviews should be held at least once every five years. Review panel members should include but not be limited to:

4. Scientists and/or administrators from the 1862 land-grant universities in the state;
5. Scientists and/or administrators from other 1890 institutions;
6. Scientists and/or administrators from out-of-state 1862 institutions;
7. Scientists and/or administrators for CSREES and other USDA agencies;
8. Extension service representatives; and
9. Farmers, ranchers and other stakeholders.

Criteria to be reviewed should include but not be limited to:

- a. Relevancy - are the research projects being conducted in keeping with the stated goals of the research program?
- b. Competency - is the cadre of scientists and technical support personnel qualified and capable of conducting the research in a professional manner?

- c. Finances - is the fiscal support of the research program sufficient to meet the stated goals?
- d. Results - are recent research results applicable to stakeholders' problems and do they give promise of a bright future for the program?

An objective review process should not only give compliments to success but should fairly and honestly point out deficiencies and suggest avenues to strengthen them. ( See also Addendum 1)

- 8. A scientific peer review process for research programs funded under section 3(c)(3) of the Hatch Act.

Not applicable to 1890 institutions.

- 9. A report of multistate and integrated research and extensions program (exempting Territories and District of Columbia).

No such programs exist at this institution other than those already reported in the section for Required Component 3.

### **Measurement of Program Impact**

The impact of the research program on the target audience (limited resource farmers and rural residents in Southwest Mississippi) is to be measured using some or all of the following parameters:

- 1. Number of technical publications per year
- 2. Number of presentations at professional meetings
- 3. Number of presentations at farmers' meetings.
- 4. Attendance at field days.
- 5. Improvement in such factors as:
  - A. Small farm income
  - B. Acreage planted
  - C. Status of health and nutrition
  - D. Reduction of soil erosion
  - E. Number and size of livestock herds
  - F. Surface and ground water quality
  - G. Other

The previous year's data will be used as a base line for determining progress.

## **Alcorn State University Research Plan of Work**

### **Addendum No. 1: In-house Peer Review Process**

When research proposals are submitted to potential funding agencies, they must first be subjected to a rigorous review process to ensure quality control. The steps of this process are as follows:

1. The author presents the proposal to the associate research director who reads and edits it . The associate research director also passes the proposal to two peers who review it.
2. The proposal is reviewed next by the Dean/Research Director and the Vice President for Institutional Advancement and Planning as to content.
3. The proposal is reviewed by the Executive Vice President as to fiscal accuracy.
4. After receiving approval from all of the above and after appropriate changes and revisions have been made to the manuscript, the proposal is submitted to the President of the university for his approval.

A copy of the approval cover sheet which is customarily used is attached to this addendum.

# **ALCORN STATE UNIVERSITY PROPOSAL APPROVAL FORM**

**TITLE OF PROPOSAL:**

**PROPOSAL SUMMARY:**

**ORGANIZATIONAL UNIT OR PERSON SUBMITTING PROPOSAL:**

**DEADLINE DATE:**

**APPROVED AS TO PROGRAMMATIC CONTENT:**

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**DEAN OF THE SCHOOL**

**VICE PRESIDENT FOR INSTITUTIONAL  
ADVANCEMENT, PLANNING AND RESEARCH**

**APPROVED AS TO FINANCIAL IMPACT:**

**Total Amount:** \_\_\_\_\_

**Funds Requested:** \_\_\_\_\_

**Matching Required:** \_\_\_\_\_

**Source:** \_\_\_\_\_

\_\_\_\_\_  
**EXECUTIVE VICE PRESIDENT**

**APPROVED BY:** \_\_\_\_\_

Clinton Bristow, Jr., President

**NOTE: PLEASE COMPLETE AND ATTACH TO THE PROPOSAL FOR  
PRESIDENT'S REVIEW AND APPROVAL**

(5/96)

**Alcorn State University  
Research Plan of Work**

**Addendum No. 2:** Table of Human and Financial  
Resource Needs as Projected  
for the Next Five Years

<b>Fiscal Year</b>	<b>Financial Resources</b>	<b>Human Resources</b>	
		<b>Professional</b>	<b>Technical</b>
*98-99	\$1,638,091	3.03	9.22
99-00	1,883,805	3.48	10.60
00-01	2,166,375	4.00	12.19
01-02	2,491,332	4.60	14.01



02-03	2,865,031	5.29	16.11
03-04	3,294,786	6.08	18.52

**\*baseline**