

FINAL PROPOSAL FOR SUPPORT  
UNDER THE  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
INSTITUTIONAL GRANTS PROGRAM

Applicant : Texas A&M University  
Date of Application : June 5, 1972  
Title : Expanding Competence in the Design and Execution of Livestock Development Programs in the Tropics Emphasizing Ruminant Livestock Production Systems through Improved Breeding and Disease Control.  
Duration : 5 years  
Amount : \$500,000

SUMMARY

This proposal is one of four which would enable recipients to improve their capabilities to assist in designing and executing ruminant livestock development programs in the tropics. This proposed grant would enable Texas A&M University to improve its capability to assist in the design and organization of breeding and disease control programs for ruminant livestock as integral facets of a livestock industry in a tropical country.

The other proposed recipients are Tuskegee Institute for design and organization of delivery systems adapted to specific social and physical environments, Purdue University for system analysis of the livestock subsector, and the University of Florida for livestock nutrition and management utilizing forages. These proposals, developed collaboratively by the four universities building on well-established programs, will be executed by coordinated plans of work, activities and efforts in order to establish a systems approach rather than a simple, ad hoc problem-solving approach to developing ruminant livestock industries in less developed countries. The capabilities of the four universities will thus be strengthened individually and as a consortium.

## I. INTRODUCTION

Ruminant livestock convert into high quality protein for human diets grass, cereal crop residue and by-products from processing that have either no value or reduced value for other uses. These products are prevalent in the tropics and in many cases are produced on land that cannot be used for cereal production. Livestock is both a source of food for the general population and a source of employment for large subsectors. In some cases entire societies live directly from livestock.

Livestock plays important roles in economies that range from subsistence to highly developed. As economic development occurs, the demand for livestock products increases in contrast to the demand for many crops which decrease as consumers can afford better diets. For this reason, livestock could become a stable earner of foreign exchange in some LDC's. Finally, progress in crop production, which in the last decade has vastly outstripped progress in livestock production, is freeing up land for livestock grazing and producing surpluses of cereals over human needs which can be used for livestock feed.

The primary objective of this set of grants is to strengthen the capabilities of the four U.S. universities through an integrated multidisciplinary approach to:

1. Identify opportunities for significant ruminant livestock production,
2. Analyze constraints to such development,
3. Design programs to overcome constraints and exploit opportunities for developing the ruminant livestock industry.

## II. RATIONALE OF THE COOPERATIVE PROGRAMS

The rationale for the linkage of these four U.S. institutions under 211(d) grants is to consolidate certain basic expertise in the several disciplines relating to tropical livestock production and to enable each institution to strengthen its capabilities to respond to LDC needs. To assure a team effort, the four universities are presenting a joint plan of action. This common effort will be further strengthened by TA/AGR participation in planning and review meetings of the consortium. Specific objectives of this program are as follows:

1. At Texas A&M University this grant will provide funds to develop competence for research and training in tropical animal agriculture related specifically to:
  - a. Identifying jointly with other members of the consortium, the geographical location(s) for the problem setting(s) for an interdisciplinary approach to the analysis of the constraints to and opportunities for development of the ruminant livestock industry.
  - b. Increasing capability to overcome these restraints particularly as these stem from deficiencies in breeding and health programs. The Animal Science Department will improve its competency relating to livestock breeding and selection as a component of livestock production and marketing in LDC's. The Institute of Tropical Veterinary Medicine will increase its knowledge and capabilities in the field of tropical diseases with specific emphasis on conditions which contribute to low levels of production. Emphasis will be in utilizing these competencies in a systems approach to livestock industries in tropical LDC's.
2. Tuskegee Institute currently has a strong integrated program in rural sociology, animal health, and livestock production with considerable experience in tropical areas abroad. The grant will provide funds for working jointly with other consortium members in selecting the location(s) for the problem setting(s), in identifying the forces which deter livestock development in that setting(s). Funds will also be used to increase expertise in overcoming these constraints, particularly where these are of a sociological nature and to strengthen expertise in integrated livestock systems approaches to research and technical assistance programs.

3. At the University of Florida this grant will provide funds for cooperating with other consortium members in determining a geographical focus for the problem, in identifying the bottlenecks to livestock development and particularly where these fall into the area of animal nutrition the funds will be used to find ways to overcome these deficiencies. In this way the University of Florida's competence in working across disciplines and with other universities generally and in working in the area of animal nutrition, with special reference to tropical feeds and forages, will be enhanced. Current training within the Center for Tropical Agriculture at the University and abroad will be strengthened. An ongoing AID supported program to collect data from laboratories in Latin America on analyses of feeds and forages also is likely to be enhanced.
4. At Purdue University this grant will provide funds for working jointly with other members of the consortium in choosing the physical location(s) for the problem setting(s), in identifying possible constraints to ruminant livestock development in that setting(s) and for studying how to overcome these constraints. Moreover, the grant will provide funds for improving the capability of the Agricultural Economics Department to make an economic analysis of alternative ruminant livestock systems and to develop a systems analysis approach for identifying major constraints to production and marketing of ruminant livestock. The systems approach may be utilized in establishing priorities for research and other requirements for overcoming these constraints.

#### The Cooperative Program

The four universities already have established commitments to agricultural programs in the developing nations. The universities have agreed that it is to their advantage, as well as to the benefit of the U.S. Foreign Assistance Programs, to cooperate in the development of techniques and methods for research and technical assistance focused on ruminant livestock systems for the wet/dry tropics. To achieve this objective, within the limitations of available resources, they propose to engage in interdisciplinary and interinstitutional activities such as:

1. To develop a staff core within each university structure that will be able to:
  - a. To identify viable projects aimed toward understanding management and systems in tropical animal agriculture;

- b. To provide for an interchange of staff among the cooperating universities to develop integrated, functional programs applicable to tropical animal agriculture development;
  - c. To utilize the expertise of visiting scientists from other universities for special requirements;
  - d. To develop collaborative workshop activities in specialized disciplines pertinent to tropical animal agriculture development.
2. To provide opportunities for education and training of the manpower required for development of the production potential of animals in wet/dry tropics, including:
    - a. Orientation of resident instruction for in-depth training on the characteristics of animal agriculture and forage production in the tropics;
    - b. Establishment of student exchange mechanisms to permit sharing of the strengths of the various institutions and to provide practical experience in the wet/dry tropical environment;
    - c. Development of courses and research techniques in tropical animal agriculture designed to hasten the training and maturity of U.S. and foreign scientists;
    - d. Development of nondegree short courses and training seminars.
  3. To improve the capability to maintain active research on animal agriculture in the wet/dry tropics as a team effort.
    - a. Providing staff with experience and competence necessary for effective training;
    - b. Providing opportunity for student involvement in research as an essential part of training.
  4. To accommodate requests for technical assistance and for consulting services relevant to animal agriculture in the wet/dry tropics; and as considered feasible:
    - a. Release staff for assignments in specialized areas of animal agriculture;
    - b. Assign qualified students for activities that would contribute to their training.
  5. To make available institutional physical resources, including office space, laboratories, equipment, and land for accommodation of activities of:
    - a. Resident staff and students;
    - b. Exchange staff and students;
    - c. Visiting staff and scientists.

### III. OBJECTIVES, SCOPE AND PRIORITIES:

The objective of this proposal is to improve the capability and capacity of Texas A&M University to assist A.I.D., other developmental agencies, and countries in the design, organization, and planning of animal breeding, management, and animal disease programs best suited to tropical and sub-tropical conditions, and incidental thereto, to improve the research, teaching, and adult education capabilities of the institution in related programs pertaining to Texas agriculture.

Assistance would be provided through training students, both graduate and undergraduate, in residence at Texas A&M; presenting short courses, workshops, or conferences at Texas A&M or in selected developing countries; and participating in training activities at other institutions, consultating, publishing, and contracting services with other entities.

The capability and capacity not only consist of the ability to design, organize, plan, and implement research, training and teaching (institutional building) programs or systems, but also of the ability to adapt the system or "package" to tropical and semitropical ecological environments with diverse cultural, social, and economic conditions.

Scope of activities under this grant would include such things as advanced training for regular staff, an increase in faculty, addition of undergraduate and graduate courses, experience and research in LDC's, development of effective linkages with members of the consortium, LDC institutions and other organizations.

Within this scope of activities, first attention will be given to faculty development, development of work plans with other members (grantees) and defining, with more precision, areas of the world and problem situations in which grant activities will be concentrated.

#### IV. UNIVERSITY CAPABILITIES:

Texas A&M University is a rapidly growing university but more concerned with the excellence of its programs than with size. There are now some 15,000 students--over 3,000 of which are graduate students. Degrees are offered by the nine colleges and the Texas Maritime Academy. Master's degrees are offered in nearly 100 fields and Doctoral programs in 60. The physical plant is valued at over \$125 million, and the research budget has doubled since 1962 to approximately \$24 million. There are about 1,000 faculty members with over half of the teaching staff having Doctorate degrees.

Facilities of Texas A&M University include a major library and five branch libraries in addition to categorized materials maintained by the various departments. A Data Processing Center offers the advantages of a well-equipped computer operation which includes an IBM 360/65.

Seven institutes, all engaged in significant research programs, are a part of the system. They are the Institute of Food Science and Engineering, Institute of Tropical Veterinary Medicine, Water Resources Institute, Institute of Statistics, Texas Transportation Institute, the Cyclotron Institute and the Institute of Theoretical Physics.

The Institute of Tropical Veterinary Medicine was established at Texas A&M to build a cadre of well-trained, experienced faculty members with the ability to conduct research aimed at improved control and prevention of infectious diseases of the tropics. This Institute also trains foreign and domestic graduate students, maintains laboratories in tropical countries and is building a library of information and training aids.

The College of Agriculture is the largest in the state and the fifth largest in the nation. Nineteen fields of study are available in the College of Agriculture to back up this 211(d) proposal. Of particular significance is the pioneering research in developing systems analyses for application to beef production in order to evaluate overall effects of various alternatives and variables. These systems approaches were developed in animal breeding but are oriented around strong research teams in the inter-related animal science fields of management, nutrition, physiology, meats and genetics and utilize techniques from economics and statistics. This research has gained international prominence and has established Texas A&M as the leading center of systems oriented beef cattle breeding.

Since 1954 Texas A&M has collaborated with AID in development programs in Ceylon, Tunisia, Argentina, Dominican Republic, Mexico, and Columbia. Other supporters have been Ford and Rockefeller Foundations and, for a special project in range and animal ecology in Tanzania, Kenya, and Botswana, the Caesar Kleberg Foundation. For international training, various agencies of the United Nations have furnished support.

During this time, Texas A&M has participated in the development or improvement of four university level colleges of agriculture, one college of veterinary medicine, two departments of home economics, five agricultural high schools, a national institute for agricultural economics, a national agricultural development organization, an institute for research in animal and range ecology. Inputs have included 350 man-years of technical and professional services by the faculty; 400 degree-oriented study programs; and 4,000 nonacademic training programs for trainees from LDC's.

At the present time Texas A&M has 639 foreign students, of which 27 are from Africa, 392 from Asia, four from Australia, 37 from Europe and Canada, and 179 from Latin America.

With support from AID, Ford Foundation, and Rockefeller Foundation, research has been undertaken in agriculture and veterinary medicine in the Dominican Republic, Mexico, and Columbia resulting in the publication of 56 research papers by staff and graduate students during the past five years.

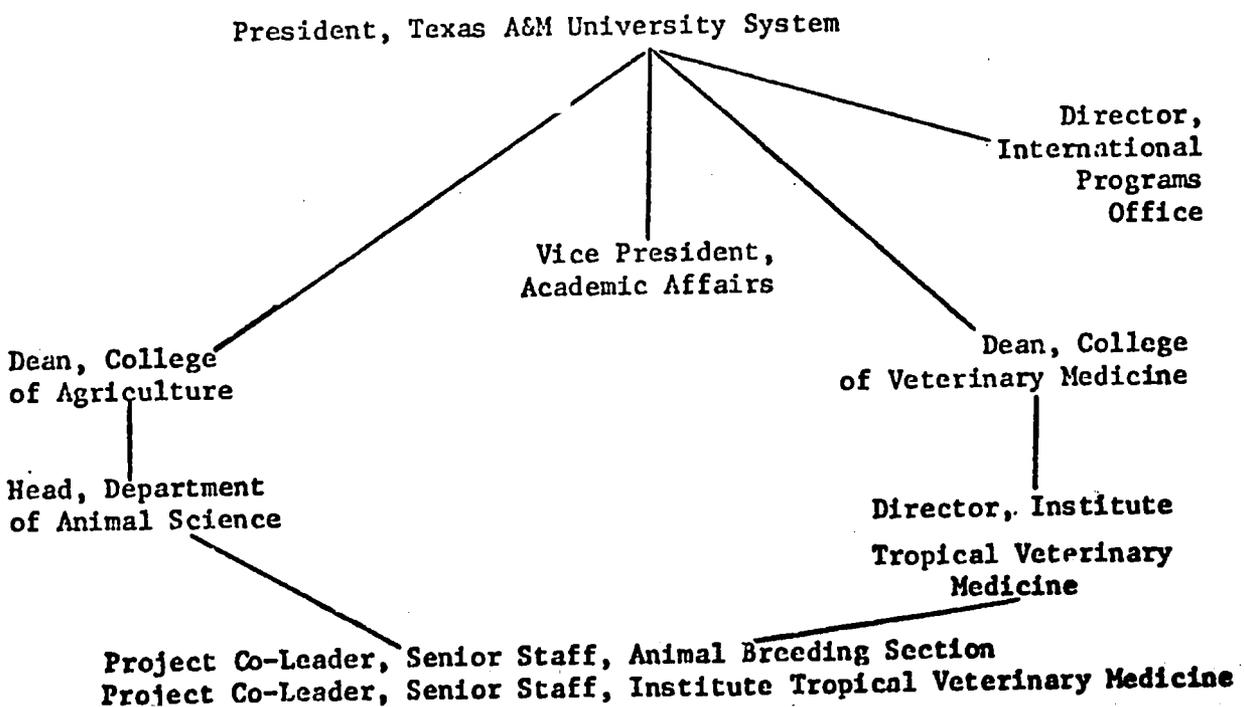
Resources developed since 1954 include an International Programs organization experienced in university participation in international development and technical assistance programs and a cadre of 200 faculty and staff members experienced in international development. A system of orientation for international service and language training for Spanish, French, and Bengali has been developed which includes competence in teaching English as a foreign language to international students.

V. CONTRIBUTION OF THE UNIVERSITY:

Funds provided by this grant will not replace or be used in lieu of existing funds for any current activities. Also, activities carried out under this grant will be additive to existing programs of the University. In direct support of the grant, Texas A&M University will provide:

1. Administrative costs, including time of Dean of College of Agriculture, Dean College of Veterinary Medicine and Heads of Departments and other senior University officials.
2. Library facilities, offices, classrooms, auditorium and conference space for faculty, students, and special meetings or symposia related to program.
3. Consultation with members of faculty and staff not directly associated with or financed by the Grant.
4. Access to field research stations, biological laboratories and facilities, data processing center, computer, and institutes engaged in significant research or development programs that are part of the University system.

VI. ADMINISTRATION ORGANIZATION:



## VII. PROGRAM IMPLEMENTATION

### A. General Long Range Plan of Work

Qualified faculty members or those to be hired with appropriate competence and experience will be assigned to the activities funded by this grant. These faculty members and their supporting staff will be charged with the responsibility for carrying out, in collaboration with members of the consortium; the following plans:

#### 1. Course

Develop lecture notes and training aids for appropriate courses relating to infectious and parasitic diseases and genetic improvement of ruminant livestock in a tropical environment. These courses will be directed toward removing constraints to production considered as part of the total system.

#### 2. Seminars

Organize a series of seminars, as deemed desirable for the development of increased capability, to be presented by the staff and visiting professors or consultants as guest lecturers on disease and breeding problems which are a handicap to cattle production in the tropics. Material presented in the seminars will be made available in written form so that it may be utilized when applicable in course syllabi and in some instances may be published. Lecture material and training aids developed for courses, seminars and for publication will be made available to the Consortium and other institutions so they too may utilize them for teaching and for extension.

3. Publications

The professional staff in the course of making literature reviews, preparing illustrations and collecting recent research information will encounter high priority subject areas for which an up-to-date review article or an extension bulletin would substantially benefit this program. As time and priorities permit, they will write such papers for publication. These publications will also contribute to class notes, seminars, and provide extension information. Appropriate translations may be provided if feasible.

4. International Symposia

After the 211(d) program is well-established, periodic international symposia on cattle production in the tropics may be cooperatively presented by the Institute of Tropical Veterinary Medicine and the Department of Animal Science with guest speakers invited from the University of Florida, Purdue University or Tuskegee Institute, and possibly other institutions. To the extent that funds are available specialists with tropical experience may also be invited from abroad.

5. Research

Research relevant to the objectives of this program is currently in progress. It is anticipated that staff and students associated with activities of this grant will be associated formally or informally with their research as part of the effort to increase capabilities in breeding and disease control in tropical ruminant livestock.

Support will be sought to enhance and expand this research. Appropriate, viable research is considered necessary for increasing competence and training students.

## 6. Library

In the course of preparing lectures, seminars and conducting research, much literature will be reviewed. Each staff member will collect copies of the valuable papers and record key references. The maintenance of a specialized library over the years will become increasingly valuable to the program and will be available for use by cooperating institutions.

## 7. Training Aids

In the course of preparing color slides, movies, tissue sections and other training aids for course lectures, seminars, reviews and research, each worker will be required to place the original illustrations and other material in a permanent resource file from which duplicate copies can be made for local use and loan to other institutions in the U.S. and abroad. The resource file will also retain copies of the associated papers or commentaries in support of illustrations so that the material will be readily adaptable to outside use.

### B. Consortium Administration

Project leaders (or co-leaders) from each member of the consortium will compose the consortium council, which will have the responsibilities:

1. To provide policy and program guidance,
2. To develop plans for the cooperative efforts, and
3. To facilitate implementation of the plans.

Chairmanship of the Council will rotate among members of the consortium. The Chairman will call meetings, maintain records, publish and distribute plans and policies, and perform such other leadership roles as are necessary to further the work of the consortium. Each member of the consortium may use grant funds to support

#### VIII. ANNUAL TECHNICAL REPORT AND REVIEW

Following submission of the Annual Technical Report, AID will initiate a review of the activities under the grant. Such a review will include an evaluation of progress, administrative and financial considerations, and the plans for the coming year. The discussions will include ways in which the accomplishments may be utilized in the AID program and other areas where technical assistance may be needed. The University will contribute to such annual (or other) reports as the consortium council may request.

#### IX. DIRECT SERVICES

No direct service will be provided using funds from this grant except for short and ad hoc consultation. Any direct services requested from the grantees will be funded under separate arrangements.

BUDGET

Salaries	\$263,000
Graduate Assistantships	110,000
Travel and Allowances	80,000
Communications, Library etc.	2,000
Equipment	10,000
Other (such as publications, printing, data processing, supplies, etc.)	<u>35,000</u>
Total	\$500,000

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DEPARTMENT OF STATE  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D. C. 20523

OFFICE OF  
THE ADMINISTRATOR

BEST AVAILABLE COPY

JUN 29 1972

CERTIFIED A TRUE COPY THIS  
21st DAY OF July 1972  
BY E. L. Lewis

AID/cst 3675

Dr. Jack K. Williams  
President  
The Texas A&M University System  
College Station, Texas 77843

Dear Dr. Williams,

I am pleased to inform you that pursuant to the authority contained in Section 211(d) of the Foreign Assistance Act of 1961, as amended, and in accordance with the agreed upon Final Proposal dated June 5, 1972, Grant No. AID/cud-3675 in the amount of \$500,000 is hereby made to Texas A&M University. These grant funds are provided to support the activities which are described in your Proposal for the implementation of your program entitled "Expanding Competence in the Design and Execution of Livestock Development Programs in the Tropics Emphasizing Ruminant Livestock Production Systems through Improved Breeding and Disease Control."

The grant is effective this date and shall continue in effect for a period of five years thereafter.

This Grant is made upon condition that your institution shall carry out the activities for which support is provided, and administer the grant funds in accordance with the Proposal (including the Budget Summary), and the Standard Provisions, attached hereto and made a part hereof. To the extent of any inconsistency between the Proposal and the Standard Provisions, and any other provisions which are made a part of this Grant, by reference or otherwise, the Standard Provisions shall control.

FUNDS AVAILABLE

Date June 30, 1972  
Project No. 931-11-136-143-73  
Obligation No. 312-1043  
Object Class 259  
Allotment 254-31-099-00-24-22  
Amount \$ 500,000.00  
By (initials) [Signature]  
AID/CST/ACC/WAB

B-11  
2900  
1/22

Please sign the Statement of Assurance of Compliance and the original and seven (7) copies of this letter to acknowledge your understanding of the conditions under which these funds have been granted. Please return the Statement of Assurance of Compliance and the original and six (6) copies of the Grant to the Office of Procurement.

Sincerely yours,

/s/John A. Hancock

John A. Hancock

**Attachments:**

1. Statement of Assurance of Compliance
2. Final Proposal and Budget Summary
3. Standard Provisions
4. Appendix "A"

BEST AVAILABLE COPY

ACKNOWLEDGED:

TEXAS A&M UNIVERSITY

BY 

Jack K. Williams

TITLE: President

*WJL*  
*JJR*