

A.I.D. Project Number 635-0203

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PROJECT

GRANT AGREEMENT

BETWEEN

THE REPUBLIC OF THE GAMBIA

and the

UNITED STATES OF AMERICA

for

MIXED FARMING AND RESOURCE MANAGEMENT

Dated: Aug 6, 1979

Project Grant Agreement

Dated

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Between

The Republic of The Gambia ("Grantee")

And

The United States of America, acting through the

Agency for International Development ("A.I.D.")

Article 1: The Agreement

The purpose of this Agreement is to set out the understandings of the parties named above ("Parties") with respect to the undertaking by the Grantee of the Project described below, and with respect to the financing of the Project by the Parties.

Article 2: The Project

SECTION 2.1. Definition of Project. The Project, which is further described in Annex 1, will consist of a series of complementary activities designed to develop an integrated approach to mixed farming and rural resource management in The Gambia through (1) a detailed evaluation of Gambian land resources, including aerial photography and the development of land use maps; (2) the development and management of controlled grazing areas and the development of basic data necessary for grazing area management and land use policies; (3) development of an improved forage production and management system and improved technologies for maize production; (4) the introduction of improved rural technologies including the provision of modified farm carts, training of Department of Agriculture personnel in new technologies, and on-farm demonstrations of improved crop production technologies; (5) strengthening of the planning and evaluation capacity of the Government of The Gambia (GOTG) by creation and training of a socio-economic unit within the Ministry of Agriculture and Natural Resources (MANR); and (6) the provision of training abroad and in Gambia in areas related to livestock and agricultural development to MANR staff, livestock and agricultural extension agents, range specialists and other GOTG personnel, and the strengthening of GOTG media programs in support of agricultural and livestock extension programs. Within the limits of the above definition of the Project, elements of the amplified description stated in Annex 1 may be changed by written agreement of the authorized representatives of the Parties named in Section 3.2 without formal amendment of this Agreement.

SECTION 2.2. Incremental Nature of Project.

(a) A.I.D.'s contribution to the Project will be provided in increments, the initial one being made available in accordance with Section 3.1 of this Agreement. Subsequent increments will be subject to availability of funds to A.I.D. for this purpose, and to the mutual agreement of the Parties, at the time of a subsequent increment, to proceed.

(b) Within the overall Project Assistance Completion Date stated in this Agreement, A.I.D., based upon consultation with the Grantee, may specify in Project Implementation Letters appropriate time periods for the utilization of funds granted by A.I.D. under an individual increment of assistance.

SECTION 3.1. The Grant. To assist the Grantee to meet the costs of carrying out the Project, A.I.D. pursuant to the Foreign Assistance Act of 1961, as amended, agrees to grant the Grantee under the terms of this Agreement not to exceed eight hundred forty-nine thousand United States ("U.S.") Dollars (\$849,000) ("Grant").

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The Grant may be used to finance foreign exchange costs, as defined in Section 6.1, and local currency costs, as defined in Section 6.2, of goods and services required for the Project.

SECTION 3.2. Grantee Resources for the Project

(a) The Grantee agrees to provide or cause to be provided for the Project all funds, in addition to the Grant, and all other resources required to carry out the Project effectively and in a timely manner.

(b) The resources provided by Grantee for the Project will be not less than the equivalent of U.S. \$1,620,000, including costs borne on an "in-kind" basis.

SECTION 3.3. Project Assistance Completion Date.

(a) The "Project Assistance Completion Date" (PACD), which is September 30, 1983, or such other date as the Parties may agree to in writing, is the date by which the Parties estimate that all services financed under the Grant will have been performed and all goods financed under the Grant will have been furnished for the Project as contemplated in this Agreement.

(b) Except as A.I.D. may otherwise agree in writing, A.I.D. will not issue or approve documentation which would authorize disbursement of the Grant for services performed subsequent to the PACD or for goods furnished for the project, as contemplated in this Agreement, subsequent to the PACD.

(c) Requests for disbursement, accompanied by necessary supporting documentation prescribed in Project Implementation Letters are to be received by A.I.D. or any bank described in Section 7.1 no later than nine (9) months following the PACD, or such other period as A.I.D. agrees to in writing. After such period, A.I.D., giving notice in writing to the Grantee, may at any time or times reduce the amount of the Grant by all or any part thereof for which requests for disbursement, accompanied by necessary supporting documentation prescribed in Project Implementation Letters, were not received before the expiration of said period.

Article 4: Conditions Precedent to Disbursement.

SECTION 4.1. First Disbursement. Prior to the first disbursement under the Grant, or to the issuance by A.I.D. of documentation pursuant to which disbursement will be made, the Grantee will, except as the Parties may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D. a statement of the name of the person holding or acting in the office of the Grantee specified in Section 8.2, and of any additional representatives, together with a specimen signature of each person specified in such statement.

SECTION 4.2. Additional Disbursement.

(a) Prior to the first disbursement of funds under the Grant for procurement of commodities and support, or to the issuance by A.I.D. of documentation pursuant to which disbursement will be made with respect thereto, the Grantee will, except as the Parties may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.:

- (1) A detailed listing of specifications for the commodities or equipment to be procured;
- (2) For equipment or commodities to be purchased in the U.S., an executed contract with a procurement services agent acceptable to A.I.D. for the purchase of such goods and services on behalf of the Grantee; and

(3) An executed contract for such commodities and equipment.

(b) Prior to the first disbursement of funds under the Grant for each construction activity or to the issuance by A.I.D. of any documentation pursuant to which disbursement will be made thereto, the Grantee shall furnish to A.I.D. the following, in form and substance satisfactory to A.I.D.:

- (1) Detailed plans, specifications and construction schedules with respect to such activity (see Section 3.2 of Annex 2 hereto);
- (2) A description of the arrangements made for providing construction services for such activity, including an executed contract for construction services with a firm acceptable to A.I.D. unless such services are being provided by force account; and
- (3) A description of the arrangements made for providing engineering supervisory services for such construction activity, including an executed contract with a firm satisfactory to A.I.D. unless such services are being provided by agencies of the Grantee.

SECTION 4.3. Notification.

When A.I.D. has determined that the conditions precedent specified in Sections 4.1 and 4.2 have been met, it will promptly notify the Grantee.

SECTION 4.4. Terminal Dates for Conditions Precedent.

If all of the conditions specified in Section 4.1 have not been met within 90 days from the date of this Agreement, or such later date as A.I.D. may agree to in writing, A.I.D., at its option, may terminate this Agreement by written notice to Grantee.

Article 5: Special Covenants

(a) The Parties agree to establish an evaluation program as part of the Project. Except as the Parties otherwise agree in writing, the program will include, during the implementation of the Project and at one or more points thereafter:

- (1) evaluation of progress toward attainment of the objectives of the project;
- (2) identification and evaluation of problem areas or constraints which may inhibit such attainment;
- (3) assessment of how such information may be used to help overcome such problems; and
- (4) evaluation, to the degree feasible, of the overall development impact of the project.

(b) The GOTG will evaluate and approve final job descriptions for all positions proposed for this project to be held by Gambians, and to the extent that said approved positions cannot be immediately filled with qualified local technicians, the GOTG will make formal application to the Peace Corps Director/Banjul for Peace Corps Volunteer assistance.

(c) The GOTG, in collaboration with A.I.D., as represented by the project manager and chief of party, will review at regular intervals all policies relating to pricing of agricultural inputs and outputs as they directly affect activities envisaged under this project.

Article 6: Procurement Source

SECTION 6.1. Foreign Exchange Costs

(a) Except as provided in Section 6.1(b) below, disbursements pursuant to Section 7.1 will be used exclusively to finance the cost of goods and services required for the project having their source and origin in countries included in A.I.D. Geographic Code 941 (as in effect at the time orders are placed or contracts entered into for such goods or services) ("Foreign Exchange Costs"), except as A.I.D. may otherwise agree in writing, and except as provided in the Project Grant Standard Provision Annex, Section C.1(b) with respect to marine insurance. Ocean transportation costs will be financed under the Grant only on vessels under flag registry of the United States or The Gambia, except as A.I.D. may otherwise agree in writing.

(b) Foreign exchange cost disbursements pursuant to Section 7.1 may be used to finance the costs of vehicles and motorbikes of a value not to exceed \$364,000 and certain construction materials (including fittings, metal door and window frames, plumbing, emergency generators, and electric items) of a value not to exceed \$57,000, having their source and origin in countries included in A.I.D. Geographic Code 935 (as in effect at the time orders are placed or contracts entered into for such services).

SECTION 6.2. Local Currency Costs. Disbursements pursuant to Section 7.2 will be used exclusively to finance the costs of goods and services required for the project having their source and, except as A.I.D. may otherwise agree in writing, their origin in The Gambia ("Local Currency Costs") to the extent provided for under this Agreement, "Local Currency Costs" may also include the provision of local currency resources required for the project.

Article 7. Disbursement

SECTION 7.1. Disbursement for Foreign Exchange Costs.

(a) After satisfaction of conditions precedent, the Grantee may obtain disbursements of funds under the Grant for the Foreign Exchange Costs of goods or services required for the Project in accordance with the terms of this Agreement, by such of the following methods as may be mutually agreed upon:

(1) by submitting to A.I.D., with necessary supporting documentation as prescribed in Project Implementation Letters, (A) requests for reimbursement for such goods or services, or, (B) requests for A.I.D. to procure commodities or services in Grantee's behalf for the project; or,

(2) by requesting A.I.D. to issue Letters of Commitment for specified amounts (A) to one or more U.S. banks, satisfactory to A.I.D., committing A.I.D. to reimburse such bank or banks for payments made by them to contractors or suppliers, under Letters of Credit or otherwise, for such goods or services, or (B) directly to one or more contractors or suppliers, committing A.I.D. to pay such contractors or suppliers for such goods or services.

(b) Banking charges incurred by Grantee in connection with Letters of Commitment and Letters of Credit will be financed under the Grant unless Grantee instructs A.I.D. to the contrary. Such other charges as the Parties may agree to may also be financed under the Grant.

SECTION 7.2. Disbursement for Local Currency Costs.

(a) After satisfaction of conditions precedent, the Grantee may obtain disbursements of funds under the Grant for Local Currency Costs required for the project in accordance with the terms of this Agreement by submitting to A.I.D., with necessary supporting documentation as prescribed in Project Implementation Letters, requests to finance such costs.

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(b) The local currency needed for such disbursements may be obtained:

(1) by acquisition by A.I.D. with U.S. Dollars by purchase;

(2) by A.I.D. (A) requesting the Grantee to make available the local currency for such costs, and (B) thereafter making available to the Grantee, through the opening or amendment by A.I.D. of Special Letters of Credit in favor of the Grantee or its designee, an amount of U.S. Dollars equivalent to the amount of local currency made available by the Grantee, which dollars will be utilized for procurement from the United States under appropriate procedures described in Project Implementation Letters.

The U.S. dollar equivalent of the local currency made available hereunder will be, in the case of subsection (b) (1) above, the amount of U.S. dollars required by A.I.D. to obtain the local currency, and in the case of subsection (b) (2) above, an amount calculated at the rate of exchange specified in the applicable Special Letter of Credit Implementation Memorandum hereunder as of the date of the opening or amendment of the applicable Special Letter of Credit.

SECTION 7.3. Other Forms of Disbursement. Disbursements of the Grant may also be made through such other means as the Parties may agree to in writing.

SECTION 7.4. Rate of Exchange. Except as may be more specifically provided under Section 7.2, if funds provided under the Grant are introduced into The Gambia by A.I.D. or any public or private agency for purposes of carrying out obligations of A.I.D. hereunder, the Grantee will make such arrangements as may be necessary so that such funds may be converted into currency of The Gambia at the highest rate of exchange which, at the time the conversion is made, is not unlawful in The Gambia.

SECTION 8.1. Communications. Any notice, request, document, or other communication submitted by either Party to the other under this Agreement will be in writing or by telegram or cable, and will be deemed duly given or sent when delivered to such party at the following addresses:

To the Grantee:

Mail Address: Permanent Secretary
Ministry of Agriculture and Natural Resources
Central Bank Building
Banjul, The Gambia

To A.I.D.:

Mail Address: The A.I.D. Representative
American Embassy
Banjul, The Gambia

Alternate address for cables:

American Embassy Banjul

All such communications will be in English, unless the Parties otherwise agree in writing. Other addresses may be substituted for the above upon the giving of notice. The Grantee, in addition, will provide the USAID Mission with a copy of each communication sent to A.I.D.

SECTION 8.2. Representatives. For all purposes relevant to this Agreement, the Grantee will be represented by the individual holding or acting in the office of the Permanent Secretary, Ministry of Agriculture and Natural Resources, and A.I.D. will be represented by the individual holding or acting in the office of the A.I.D. Representative, each of whom, by written notice, may designate additional representatives for all purposes other than exercising the power under Section 2.1 to revise elements of the amplified description in Annex 1. The names of the representatives

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of the Grantee, with specimen signatures, will be provided to A.I.D., which may accept as duly authorized any instrument signed by such representatives in implementation of this Agreement, until receipt of written notice of revocation of their authority.

SECTION 8.3. Standard Provisions Annex. A "Project Grant Standard Provisions Annex" (Annex 2) is attached to and forms part of this Agreement.

IN WITNESS WHEREOF, the Grantee and the United States of America, each acting through its duly authorized representative, have caused this Agreement to be signed in their names and delivered as of the day and year first above written.

THE REPUBLIC OF THE GAMBIA

By: _____

Title: _____

UNITED STATES OF AMERICA

By: _____

Title: _____

PROJECT DESCRIPTIONI. General Background

In the present Five-Year Development Plan for the period 1976-1980, the Government of The Gambia (GOTG) has taken cognizance of the economy's structural weaknesses and vulnerability posed by the heavy dependence on a single primary crop. The central thrust of this Plan is toward intensified development of the rural sector and, particularly, toward increased diversification of agricultural production and better management of rural resources.

Underlying problems which must be dealt with effectively if the Gambian agricultural system is to develop to the greater benefit of the rural population can be grouped into four categories:

1. Problems related to the growing population pressures -- both human and animal -- on a limited land resource base in a harsh ecological zone.
2. Problems related to the low productivity of traditional crop and livestock enterprises within the farming system.
3. Problems related to the lack of adequate rural infrastructure to support a modern, intensive system of agricultural production.
4. Problems related to the low level of general education and, particularly, the very limited exposure to modern agricultural technology among the rural population of The Gambia.

These underlying problems pose serious dilemmas for the rural population of The Gambia and for the Government in seeking to address the issues of environmental damage from overgrazing and indiscriminate devegetation, soil depletion, and the general loss of productivity inherent in the current agricultural system of the country. Increasing population has placed additional pressures on the land and water resource base. These pressures result in more acres cleared, more livestock grazing, and more cutting of wood. Efforts to extend traditional crop and livestock enterprises simply by increasing the land surface to provide a minimal standard of living for a population increasing at a rate of 2.8 percent per annum lead inexorably to greater conflicts among farm enterprises, e.g., dry season cultivation of rice versus utilization of these areas for forage reserves for livestock, shortening of fallow periods and a longer continuous planting of soil-depleting crops, using of scarce agricultural resources on even more marginal croplands, and excessive removal of the forest cover. Resource degradation is the direct result of these greater land pressures. Similarly, intensification of agricultural production is difficult due to a lack of adequate development resources and proven adapted technologies. The situation is particularly bad on land that is not under annual cultivation of crops because external donor agencies have tended to concentrate their attention and available resources wholly on existing cropland while neglecting the equally important problem of the management of fallow and non-crop lands. This situation has resulted in a non-integrated approach to rural resource management and is the primary reason for the interventions proposed in this project.

The Government's first significant movement away from almost total dependence on British assistance in agriculture was the formulation of the four-year \$11.7 million Rural Development Project (RDP) in collaboration with the IBRD/IDA, the British Ministry for Overseas Development, and the Arab Bank for Economic Development in Africa. This project, which is now in the third year of implementation, focuses on agricultural development with major components in agricultural extension and training, cooperatives development, agricultural production credit, seed multiplication, crop extraction roads, and adult numeracy. The RDP is oriented toward crop husbandry at the farm level and complementary extension support services within the Department of Agriculture in the Ministry of Agriculture and Natural Resources (MANR).

Primary crop emphasis is on technological crop packages, variety screening, and seed multiplication for rainfed foodstuffs: rice, sorghum, and millet. Groundnuts are included as the primary cash crop. The IBRD/IDA has recently undertaken exploratory discussions with the GOTG on the content for the expanded Phase II RDP to begin in 1980.

In addition to the above, and in consonance with the GOTG's expressed wish that A.I.D. concentrate its expertise on integrated rural resource management, A.I.D. has embarked upon a project to establish a Soil and Water Management Unit within MANR. Regional and Gambia-specific crop protection activities are moving forward with A.I.D. and FAO assistance under the auspices of CILSS. A.I.D. is currently examining the feasibility of assistance in revegetation/reforestation in conjunction with other donors through CILSS and the Club de Sahel.

Within the backdrop of other donor assistance to the rural sector of The Gambia and in considering the likely components of the expanded RDP, tripartite discussions involving GOTG officials, representatives of the IBRD, and A.I.D. staff members isolated one major area of concern which was not being adequately covered by any donor. The area was integrated resource management on fallow and non-cropland with appropriate livestock and forestry elements. Discussions further revealed to all parties:

- (a) Recognition that the mixed farming nature of Gambian agriculture necessitates efforts to develop both crop and non-crop enterprises at the farmer level; and
- (b) Recognition that preliminary estimates of IBRD/IDA funding availabilities for Phase II RDP do not permit extensive involvement in non-crop related development activities.

This project was designed to provide these needed complementary efforts in the area of mixed farming and resource management.

II. Goals and Purpose of Project

The goal of this project is to increase the economic well-being of the rural people of The Gambia. The purpose of the project is to foster intensification and integration of crop and livestock enterprises within existing Gambian farming systems so as to contribute to increasing net rural family incomes on an ecologically sound and sustained yield basis.

III. Detailed Project Description

The project is formulated as an initial five-year effort to run from FY 1979 through FY 1983, with a possible second phase to be designed during the implementation of this project.

The components of the project are discussed below under six separate subheadings. These components are not discrete packages into themselves but highly interrelated and mutually supportive actions upon whose joint success depend the benefits of the project.

The essence of the project as outlined in the following several pages is that The Gambia is faced with a series of difficult and complicated choices in the development of its agricultural sector. In the areas that have been isolated for assistance by A.I.D., the range of choice in technology and complexity in problem-solving is perhaps greater than in any other area of development if only because the areas have been neglected in the past and therefore one is starting from a less well-defined base for field work. Faced with this situation, the project activities flowing from this project are more developmental in focus than oriented toward extensive promotion and implementation of known and proven technologies. There is not as yet a defined and proven series of technological packages in all the areas under consideration in this project. The preferred method of dealing with this situation is by devising and field testing the needed

technological packages in interdisciplinary interaction with team members from a number of related or complementary disciplines. The core of A.I.D. assistance in the project is the multidisciplinary team of six long-term specialists who will interact and critique on all component activities. The end point of each component therefore is a technological package and a series of interventions which relate to the other components of the project and have been specifically devised, tailored and adapted by the team to meet Gambian farming conditions through an organized and disciplined research and testing process.

A. Land Resource and Use Evaluation, Classification and Cartography

Increased governmental and community effort in the area of resource planning and, in its broadest sense, conservation is hindered by the fact that no detailed evaluation of Gambian land resources and use patterns has ever resulted in readily-available, large-scale land classification cartography that is so essential for effective land use planning.

The first component of the project, therefore, is designed to remedy this situation by assisting the Government to obtain and utilize detailed large-scale (1:25,000) land classification maps for each of the five administrative divisions of the country. The land use mapping will be done by contract with a Photo Interpretation cartography firm. Maps will be made from aerial photos flown in December 1979 - January 1980 using high resolution photography at a contact print scale of 1:25,000. The land use maps will identify the three precipitation zones that influence vegetation types, soil formation and, to some extent, existing cultivation patterns. The maps will be based on a general land use classification system. The mapping will also include delineation of existing land uses, villages, trail and road systems, other standard features and political boundaries normally provided on base maps as specified by the GOTG.

A cadre of Gambian resource planning technicians capable of using and interpreting aerial photos will be trained over the course of the project. The initial training and development of training materials similar to the USDA Soil Conservation Service Training Manual but directly relevant to The Gambia will be done by outside consultancy. This training will include aerial photo interpretation, simple mapping procedures, development, care and storage of overlay maps. Once the initial training materials are developed, all subsequent training will be done from within the MANR by trained local personnel.

The aerial photos and the land use maps will be used extensively to support resource inventories and the ecological survey as outlined in the component on grazing areas development and management. Much of the long-range planning for village grazing areas will require the use of base maps. The land use maps will also be used by the Ministry project planning and management unit and the project socio-economic unit as a set of base maps for analyzing or increasing physical land boundaries of sample villages. Successful completion of this component will result in:

- (1) Current aerial photos used by all Departments of the MANR and two or three other ongoing projects.
- (2) Land use maps used by MANR in the development of national land use policy, as well as village-level land use planning.
- (3) Ten staff and field-level personnel suitably trained to use aerial photos in their field work, and using the photos at least once a month in their work.

Implementation of this component will require contractual assistance for both the aerial photography and the photo interpretation, cartography and training of local technicians. Estimated cost of this component is US \$849,000. It is anticipated that all contractual activities under this component will be completed within two years from the signing of the necessary contracts.

B. Grazing Areas Development and Management

Traditional grazing areas in The Gambia can be divided into two distinct categories:

1. Cultivated land that is usually grazed by small and large ruminants after crops are harvested; and
2. Fallow land, range and woodland that are available for grazing whenever forage availabilities permit.

The national herd is increasing and placing more and more grazing pressure on these lands. Traditional methods of grazing management and other manipulations of the land have established a chronic set of resource deterioration problems. The solution - or, at least, a start toward a solution - must use an interdisciplinary approach for development of appropriate technology that can be provided to livestock owners and that will result in protection of the resource base as well as maintenance of the national herd at a productive level.

The major problems identified as constraints to an improved grazing and resource management system in The Gambia are the lack of quality forage in sufficient quantity to meet maintenance and growth requirements of large and small ruminants on a year-long basis, the quantitative lack and poor distribution of existing livestock watering facilities, and the lack of sufficient basic field data to develop and implement effective grazing management plans with the existing livestock owners associations and other cooperating groups.

The purpose of this component, therefore, is to provide necessary support to the GOTC in the development and management of controlled grazing areas designed to improve the nutritive status of large and small ruminants using them, and bring animal units in balance with the natural resource base of the country. It will also produce the basic data necessary for the GOTC to develop national resource management and land use policies. It will provide the beginning for improvement of the national natural resource base and maintenance of that base at a level capable of sustaining needs of the resource users.

Using the results that will flow from the preceding project component and in active collaboration with project technicians supplied under subsequent components, it is envisaged that this component will:

1. Provide assistance to the GOTC in developing a national land use planning capacity within the MANR which can relate to the problems of both cropland and non-cropland utilization.
2. Provide assistance in training specialized agents at all levels in grazing areas development and management.
3. Provide assistance to the Department of Animal Health and Production in planning and implementing a program of legislated, controlled grazing areas with the necessary stock access routes, firebreaks, forestry shelter belts, and stock-handling facilities.

With regard to the development of a national land use planning capacity, an excellent start is being made through the formation with A.I.D. assistance of a Soil and Water Management Unit within the MANR. This component proposes to build upon and support that Unit by supplying to the Ministry such technical assistance as will be necessary to formulate and implement an overall national land use plan. Particular attention in this component will be given to the management of fallow and non-cropland.

This component also proposes to build upon the existing GOTG program for physical demarcation of livestock trails and grazing areas which was started in 1976 as a precursory step to improved range management planning at the village level. Transport will be provided by the project to have pillars installed for permanent route demarcation at up-country sites. A joint effort between the project, AHPD and the local members of villages and Livestock Owners Associations (LOA's) be utilized to set up the pillars.

Under this component, AID will supply to the MANR a professional with training and experience in plant ecology, range management and renewable natural resource planning. Over the life of the project, the specialist will direct a team of 6-8 Gambian technicians who are already in training in the United States and Kenya, in an intensive program which will include:

- a. Acceleration of the existing program of physical demarcation of livestock trails and grazing areas.
- b. Use of the cartography provided under component A to classify and evaluate all such demarcated areas.
- c. Studies of range vegetative cover composition, condition and resultant carrying capacities within the demarcated village grazing areas.
- d. Compilation of a base line ecological inventory of existing plant communities and a forage quality analysis.
- e. Development of a simple methodology for range management assistants to determine the forage needs of villagers, including development of simple illustrations and information guides.
- f. A series of grazing land management and production trials in collaboration with the Project's Forage Agronomist and Animal Nutritionist.
- g. Work with the Department of Forestry in grazing trials on designated woodland areas and forest parks to introduce and evaluate browse species suitable for livestock use and subsequent firewood supply.
- h. Controlled burning experiments to determine the immediate and long-term effects of this practice on Gambian range land.
- i. Development of the required data base for year-round forage resource planning and range management schemes with selected livestock owners associations.
- j. Provision of specialist expertise to assist MANR efforts in national natural resource planning and policy formulation.

- k. Advanced participant training in range management for up to two Gambians, basic courses for agricultural and livestock assistants and inspectors, development of basic extension-type programs in grazing land management, and production of films about grazing land management for showing by cinema vans.

Component Outputs

(1) Dappos Development

Ninety percent of a-1 known dappos will be permanently demarcated by markers (pillars).

(2) Ecological Inventory

A species list of all dominant and subdominant plants will be complete. Three mounted sets of plant specimens will be complete with one set each sent to the Smithsonian Institution, Washington, D.C., and the British Museum, London.

An ecological classification of existing vegetation types will be developed.

200 forage yield samples will be completed. This will be representative of major ecological sites of The Gambia.

Four range management assistants will be trained in basic plant identification plant yield sampling and vegetation mapping.

Mapping of ecological communities will be 50% complete.

(3) Grazing Land Management Forage Production Trials

Four 10-acre trial plots will be established at three locations in The Gambia.

Study designs will be developed and at least two years data collected.

At least one field day will be conducted at each trial site with villagers brought in for the event.

(4) Woodland Grazing

An empirical study will be conducted to list the susceptibility of important forest trees to grazing and burning at various stages of growth.

Potential fuel-browse species native to The Gambia will be identified and an analysis of forage quality completed. A small plantation trial plan will be developed.

(5) Management of Grazing Resources

A data base will be developed to describe the traditional methods and ways of grazing management.

Three villages will be identified for grazing manipulation trials in village grazing area.

A set of year-long forage strategies will be developed with plans for implementing on a limited basis.

Three range management movies from other countries will be made available and one set of visual aids explaining principles of grazing land management will be completed for use by extension and range assistants.

- (6) A brush fire prevention information program will be instituted and operational.

C. Improved Crop and Forage Production and Management

This project component consists of two separate activities, an Improved Forage Production and Management Program and a program for Maize Improvement for Increased Food and Feed Production.

1. Improved Forage Production and Management Program

The Improved Forage Production and Management Program will include studies to determine the potential of introduced grains and legumes so as to increase total herbage available for grazing. Principal project activities include:

- a. A survey of existing information and materials about improved forage species in The Gambia.
- b. Introduction and evaluation of exotic tropical grass and legumes species and cultivars.
- c. A demonstration of the potential of extending dry season grazing by introducing a forage legume into the fallow and utilizing groundnut hay more effectively.
- d. Establishment of observational trials under grazing in certain regions in collaboration with the Range Management and Livestock Nutrition sections.
- e. In collaboration with the Seed Multiplication Officer, development of a seed production program to increase seed supplies of suitable and adaptable grass and legume species.
- f. Improvement of the capability of the Department of Health and Production and the Department of Agriculture to deliver improved technology about improved forage production to livestock owners by training Gambian Animal Husbandry Specialists in techniques of an integrated improved forage-livestock program.

To carry out these activities, AID will finance the services of a Forage Agronomist for a five year period. The Forage Agronomist will be attached to the Department of Animal Health and Production and headquartered at Abuko. AID will also finance commodities, equipment and supplies for the program, including vehicles, tractors and attachments, forage dryers, scales and balances, burlap and cloth bags, garden tools, seeds, fertilizers, fencing, and housing for the Forage Agronomist.

The GOTG will provide one Gambian counterpart to the Forage Agronomist having the equivalent of a Bachelor of Science degree in Agriculture and a Gambian field staff, including two grass-legume introduction garden worker supervisors, three or four permanent field workers to assist with maintenance of the introduction garden, agronomic trials, seed harvest, grazing trials, etc., five to six temporary laborers up to six months/year at Yundum and YBK, up to ten extension assistants, each with two or three demonstrators at as many Mixed Farming Centers to assist in the programs of introduction of a forage legume into the fallow and improvement of the quality and utilization of groundnut hay, and two tractor drivers.

It is anticipated that two Peace Corps Volunteers with B.S. degrees in Agronomy will be provided to assist in establishing grass and legume introduction gardens, evaluating the potential of introduced species, cultivars and selections, and carrying out agronomic trials; to train Gambian Extension Assistants in techniques and methodologies of delivering technology of improved forage practices to farmers; to work alongside these assistants at the farmer level; and to collect data and information at the farm level so as to evaluate the improved forage practices.

2. Maize Improvement for Increased Food and Feed Production

This project component proposes to increase the production of maize as a food and as a feed for livestock. The vast majority of the crop will be used for human food but use of maize as a residual feedstuff will provide an important commercial outlet for small farmer production. Activities to be conducted include:

- a. The development of a technological package for improving maize production as a food or feed grain.
- b. In collaboration with the Department of Agriculture, expansion of the maize cultivar testing and agronomic programs at the Yundum Station. Some of the promising cultivars will be placed in regional trials located at 10 or more Mixed Farming Centers.
- c. The conduct of limited audits of fertilizer response and plant densities at Yundum.
- d. Assistance to Department of Agriculture in planning and developing a maize seed increase program.
- e. The conduct of regional trials of the technological package to be implemented through the Mixed Farming Centers and the Department of Agriculture cereal improvement program; this includes assisting in the training of Department of Agriculture Extension Assistants and demonstrators in delivering the technological package to farmers.
- f. The introduction of a simple hand sheller with training in its use.
- g. A survey to determine the manner of maize stover disposal at present and possible utilization as a livestock feed.

AID will provide one Maize Extension Agronomist for a three-year period. The Maize Agronomist will be attached to the Department of Agriculture and headquartered at the Yundum Agricultural Station. This individual will be expected to travel extensively within the country. AID will also finance commodities, equipment and supplies required for the program, including vehicles, a tractor and attachments, a commercial-type maize sheller, scales and balances, burlap and cloth bags, hand-operated maize shellers, seed grader, a revolving fund for fertilizers and maize shellers, and housing for the Maize Agronomist and family.

The GOTG will provide a Gambian counterpart having the equivalent of a B.S. degree in Agriculture for a period of at least one year; and Gambian field staff, including one field supervisor at Yundum to assist with varietal and agronomic testing, seed multiplication, and processing, two permanent laborers and three temporary laborers to assist with field tests at Yundum, and up to 15 Extension Assistants, each with two or three demonstrators at as many Mixed Farming Centers to assist in regional testing of maize cultivars and location of on-farm studies.

It is anticipated that one Peace Corps Volunteer with a B.S. in Agronomy will assist in carrying out cultivar and agronomic trials, train Gambian Extension Assistants in techniques and methodologies of delivering the maize technological package to farmers, work with the Extension Assistants, and collect data and information at the farm level so as to evaluate the effectiveness of the technology package.

D. Improved Rural Technology

The objectives of this project component include:

- (1) In collaboration with the Gambian Cooperative Union, the establishment of a revolving fund for use as commodity credit to expand resources on farms, particularly to integrate the use of farm cart transport into mixed farming systems.
- (2) Demonstration that the "modified farm cart" can be effectively used to improve efficiency of farm operations.
- (3) The development of technology for improved livestock methods by using farm carts to aid in the establishment of compound units for storage of crop residues and in devising systems of storage for the crop residues which most effectively maintain and/or improve their nutritive value for livestock.
- (4) Training of Assistants and Inspectors in efficient use of mixed farm resources for animal and crop production.
- (5) Demonstrate to Livestock Owners Association (LOA) members improved methods for the use of their on-farm resources through conducting on-farm demonstrations in crop residue and forage preservation and in the management and utilization of manure in crop production particularly on compound crops like maize.

AID will provide the short-term services of an agricultural engineer (1 month/year for two years), supervision of Peace Corps Volunteers and Gambian Technicians by the long-term AID specialist team, and provision of a revolving fund for distribution of approximately 400 farm carts per year over the life of the project. The Agricultural Engineer will be attached to the Department of Animal Health and Production with Abuko as home base and will collaborate with the division of Engineering of the Department of Agriculture. During visits the Engineer will be expected to make several presentations to the trainees for Livestock Assistants and Inspectors on methods for the preservation of crop residue and other crops on small farms. He will be expected to work with Livestock Assistants in conducting demonstrations for LOA's on: (a) the use of carts in transport and distribution of manure; (b) use of carts in transport of crop residue; (c) methods of improving farm storage of crop residue; and (d) construction of storage sheds maximizing the use of local materials.

The GOTG will provide one experienced Gambian Livestock Assistant counterpart having the equivalent of a B.S. degree in Animal Husbandry to work directly with the Engineer during visits and assume responsibility for the program in the interim.

Two Peace Corps Volunteers will be provided to work as a team at YBK with LOA members who purchase ox carts under the credit scheme. The PCV/Rural Development Specialist will have primary responsibility for identifying how and when interventions may be most appropriate in the traditional farming system, identification of personnel in the compounds as best contact for instruction on the use of carts, and instruction of borrowers on their responsibilities regarding credit. The PCV/Agricultural Specialist will be responsible for guidance of farmers in the use of ox carts, the need for training of oxen, the importance of proper feeding of oxen, and the construction of storage facilities. The PCV's will also train Gambian Livestock Assistants and Inspectors on techniques for improved use of potential feed resources, the handling and use of manures and will collect data and information at the farm level for use in evaluation of carts and storage as benefits to rural development.

E. Strengthening Ministry Planning and Evaluation Capacity

A Socio-Economic Unit will be established within the Ministry of Agriculture and Natural Resources to do ex ante project planning and ex post evaluation. It is envisioned that the Socio-Economic Unit will have the following functions:

- (1) Descriptive Function: The Unit will provide information of a quantitative and qualitative nature describing and analyzing the livestock and land use systems operating in The Gambia.
- (2) Testing Function: The Unit will be involved in testing at the field level the particular technological packages developed by the project in order to assess their relevancy to the local Gambian farmer; and testing the potential of the "institutions" or exogenous factors serving the livestock producers to provide the necessary incentive and support to increase their level of economic well-being and to ensure an equitable distribution of that improved well being.
- (3) Monitoring Function: The Unit will monitor changes over time as a result of project interventions in order to ascertain if the packages and/or strategies are proceeding as anticipated or whether some modification is necessary; and to assess the impact of the project and therefore provide a base for its evaluation.
- (4) Training Function: The Unit will build up a core of Gambians with a micro socio-economic orientation in the MANR.

The planned activities of the Socio-Economic Unit over the life of the project are as follows:

- (a) A baseline study will be undertaken in project years one and five to obtain an idea of the characteristics of the farming systems in The Gambia in which livestock are incorporated and to delineate in tentative terms the constraints faced in livestock production in each of the farming systems identified.
- (b) Commencing in project year two, an in-depth frequent interview survey will be conducted of Gambian livestock and crop enterprises in order to obtain an in-depth understanding of the main farming

systems in The Gambia which incorporate such enterprises. This study will involve, inter alia, collecting data on inputs and outputs of each crop and livestock enterprise, estimates of income derived from and productivity of livestock and crop enterprise, and relationships between them, detailed information on cash flows, decision-making and management practices particularly with reference to livestock, quantitative technical information requested by project technical scientists, etc.

- (c) Commencing in project year two and continuing throughout the project, special surveys will be conducted in order to evaluate technologies being tried in other project components and complementary or supplemental socio-economic studies will be conducted on issues related to ongoing programs under the project. Planned studies include:
- (1) Range Management and Forage Agronomy: herdmen's perception of the value of different plants, grazing practices, utilization of groundnut haulm, etc.
 - (2) Maize Program: disposition of maize for human food and/or animal feed and provision of shellers and grinders.
 - (3) Cattle and Sheep Fattening Program: economic feasibility of the program and compatibility with existing farm systems and markets.
 - (4) Farm Cart Program: examination and testing of potential of the farm cart; determination of the degree to which the farming system can be improved as a result of using a cart.
 - (5) Marketing Study: effect of intensified production systems on livestock marketing.
 - (6) Livestock Owners Association Study: whether LOA's are the appropriate vehicle through which interventions should be moved in terms of equitable access of benefits; how dynamics of relationships within LOA's change over time; effect of LOA organizational structure on structures at village level.
 - (7) Other Studies, such as effect of land tenure system on increased land usage, issues relating to the dappo program, etc.
- (d) Training of counterparts in conducting and analyzing field surveys will be provided with opportunities given for advanced degree training in overseas institutions. Short courses will be arranged for enumerators on interviewing techniques, questionnaire administration, field measuring techniques and analytical methods using calculations.

The program above should not be viewed as a complete program particularly in the later years of the project when the Unit's priorities will be assigned on the basis of the results of previous years. To ensure coordination of the work of the Socio-Economic Unit and its continued relevance to the needs of the project, the Unit will conduct an extended planning session every six months to discuss and agree on an overall work plan and shorter meetings every two months to discuss progress. Senior staff of the Unit, technical scientists representing other components of the project, representatives from RDP/SESIMU, the UNDP technical group in MANR, technicians from the AID Soil and Water Management Unit, representatives from The Gambia River Basin Commission, and representatives of LOA's will be invited to these meetings.

The senior staff of the Unit will include three agricultural/livestock economists, two rural sociologists, and four social scientists. AID will finance five person years of technical services for one agricultural/livestock economist and one rural sociologist and short-term technical services of a marketing specialist and an evaluation team at the end of project year three. AID will also finance the cost of vehicles and field office and data processing equipment, enumerator's salaries, and miscellaneous office furniture and supplies. The GOTG will provide two Gambian agricultural/livestock economists and one Gambian sociologist for the Unit and the four shorter term social scientists. If it is not possible to recruit suitable Gambians for these latter four positions, Peace Corps Volunteers will be requested. GOTG will also recruit approximately 25 individuals to act as enumerators.

F. Agricultural Skills Training and Communications

The objective of this component is to increase the pool of trained Gambian manpower in the agriculture sector and to improve and facilitate the flow of information concerning agricultural technologies and practices from extension agents and other MANR personnel to the rural population.

The specific activities/procurements to be undertaken under this component include:

- (1) Participant training. Fifteen person/years of participant training in U.S. or African institutions will be financed by AID for Gambian trainees from middle or high level staff candidates.
- (2) Local training of Gambians. The GOTG will undertake to finance and carry out local training for twenty Gambians required for the project, including one mechanic, two laboratory assistants at Civil Service Grade 1 for the feeds laboratory at Abuko, twelve fence builders, one tractor driver/operator, three fence menders, and one operator for the maize sheller at Yundum.
- (3) Training role of the six long-term U.S. technicians. The six long-term U.S. technicians financed by AID under the project will also have major responsibilities for counterpart training and improvement of pre-service and in-service staff training capability. It is estimated that the classroom and field teaching responsibilities of these key project personnel will occupy from one quarter to one third of their time.
- (4) Skills reinforcement. Over the life of the project, thirteen Peace Corps Volunteers will train Gambian livestock and agricultural extension agents, agricultural center staff, enumerators, livestock assistants and inspectors, range management specialists, Department liaison representatives in the fields of forage agronomy, agriculture, social science research, animal nutrition, range ecology, graphics, and communications evaluation. AID will finance the purchase of a motorbike for each Peace Corps Volunteer at the rate of one motorbike for each two years of service. Actual costs for in-country allowances for these technicians will be contributed by the Peace Corps directly.
- (5) Workshops in training and communications. Three workshops will be conducted under the project: a one-week training program in 1980 for senior officials in the Departments of Agriculture and Animal Health and Production on the role of the forage and feed evaluation laboratory at Abuko in the project and in supporting Gambian agricultural research; one workshop in late 1981 on training methodology and evaluation and a three-week training seminar in early 1982 on photo interpretation and use of aerial photography in land use management and planning.

- (6) Training materials. Training materials will be financed by AID to support the Abuko/Yundum and YBK Training Centers.
- (7) Transportation. AID will finance the purchase of fifty motorbikes for field staff engaged in extension and training activities and one twenty-two passenger bus to help transport trainees and farmers to YBK, Abuko and for field work.
- (8) Communications support. AID will finance the purchase of equipment to support the Extension Aids Unit of the Ministry of Agriculture and Natural Resources to build up the capability of its extension services and to extend these services to a greater number of Gambian farmers. With the additional support, the Extension Aids Unit will conduct the following activities:
 - (a) 50 transistor radios will be supplied to the Livestock Owners' Association so that Association members will have direct access to radio listening, including programs in local languages on agricultural and livestock development;
 - (b) 200 hours of audio-taped farmer discussions, questions and answers will be recorded;
 - (c) 50 hours of video-taped materials on farm demonstration, packaged fattening schemes, chicken raising, etc., will be produced and viewed by 5000 farmers over playback monitors in their villages during visits from the Department of Animal Health and Production Specialists;
 - (d) Approximately 175,000 villagers will see several films on agricultural and livestock products through operation of the fleet of circulating cinema vans;
 - (e) Five local films on animal health and production subjects will be produced and five others borrowed or copied;
 - (f) Copies of local films will be circulated to other Sahelian countries and Africa media institutions; and
 - (g) Graphic materials for extension and training uses will be produced under the direction of a Peace Corps Volunteer using already available equipment and materials.

AID will finance the purchase of one mobile cinema unit plus parts, one portable video-tape set, fifty hours of video cassettes, one 16-mm movie camera and sound equipment, fifty transistor radios, two reel-to-reel tape recorders, audio tape reels, the production and processing of five fifteen minute 16-mm B&W films, the production of sound negative films with four copies of each film, and the purchase of ten additional films.

It is anticipated that the Peace Corps will provide a PCV/graphics specialist to work four years in the Extension Aids Unit with the production of media support materials for the extension services; and a PCV/program evaluator to help create a feedback and evaluation system to monitor the impact of agricultural/livestock extension services and improve the effectiveness of the Extension Aids Unit for four years.

Over the life of the project, as part of its contribution to this component, the GOTG will train and assign to the Extension Aids Unit a Director of the communications support system, a graphist, an evaluator of communications and extension services to take over the communications evaluation and feedback program at the Unit by 1982, one film maker/media specialist, and a Director of Farmer Training.

4. Project Implementation and Administration

The project, as designed, will be implemented by the MANR with support assistance of the AID office in Banjul in the person of an AID direct-hire project manager and the assistance of a technical assistance team consisting of six long-term specialists and a number of short-term consultants as called for in the six project components. The responsibility for the implementation of the project will be in the Office of the Minister of the MANR in the person of the Permanent Secretary, who is the highest ranking civil servant of the Ministry and its principal executive officer. For purposes of administration, planning and execution of project activities, and coordination with all other donor agencies with projects in the field of rural development, the project will function through two permanent units of the Ministry within the Office of the Minister. They are the Program Planning and Management Unit (PPMU) and the Project Coordinating Committee (PCC). The former is the overall planning and programming unit of the Ministry at a supra-Departmental level and consists of the Permanent Secretary, the Directors of all operational branches of the Ministry, the Managing Director of the Gambia Produce Marketing Board (GPMB), the Managing Director of the Gambia Livestock Marketing Board (GLMB), the project manager of the IBRD/RDF, and such other representatives of other Ministries of the Government as are requested to participate by the Permanent Secretary - e.g., representatives from Economic Planning, Finance, the Central Bank, the Office of Central Statistics. The Unit is supported by a permanent professional planning staff of Gambians and Expatriates consisting of the following specialities: agricultural planning/macroeconomics, agricultural marketing, cooperatives operations, agricultural credit, agricultural statistics, and a number of technical agricultural skill areas like animal science, veterinary medicine, agronomy and forestry.

The professional team provided under this project will become an integral part of the PPMU and will work through the Unit in performance of its daily project implementation tasks with the various operational Departments of the Ministry - e.g., the maize agronomist with the Department of Agriculture; the range management/ecology specialist and the animal nutritionist with the Department of Animal Health and Production; the forage agronomist with both Departments; and the agricultural economist and the rural sociologist with all Ministry Departments. Routine team representation and liaison at PPMU meetings will be the primary function of the AID direct-hire project manager and the technical assistance team's designated chief of party, who will be one of the team specialists. All other technicians will work directly at the PPMU planning staff level and attend general PPMU deliberations as called upon for technical expertise.

Project coordination with other donor agencies will be conducted formally through the PCC. This committee consists of the Permanent Secretary, the Directors of all Departments, and the Managing Directors of the GPMB and the GLMB with representatives from all external donors having projects in rural development. Primary representation on the PCC will again be through the AID project manager and the technical assistance team's chief of party. And, of course, in a country as small as The Gambia, there is always adequate scope for informal contact, discussion and coordination in daily activities

on an informal level with all major donor representatives for all team members.

5. Financial Plan

The Project Financial Plan is set out in Attachment 1 hereto.

PROJECT FINANCIAL PLAN
(\$000)

As of _____, 1979

Project No. 635-0203

AID Contribution

<u>Project Activity</u>	<u>FY 79</u>	<u>Future Years Anticipated</u>	<u>Total</u>
1. Land Resources and Use Evaluation, Classification and Cartography	849		849
2. Grazing Areas Development and Management		860	860
3. Improved Crop and Forage Production and Management		1,228	1,228
4. Improved Rural Technology		293	293
5. Strengthening Ministry Planning and Evaluation Capacity		1,367	1,367
6. Agricultural Skills Training and Communications		398	398
7. Inflation and Contingencies		1,005	1,005
	<u>849</u>	<u>5,151</u>	<u>6,000</u>

Grantee Contribution

<u>Input</u>	<u>FY 79</u>	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>Total</u>
1. Salaries and indemnities for local personnel	200	245	245	245	245	1,210
2. Value of sites and services	120	10	10	10	10	160
3. Operating Costs	50	50	50	50	50	250
	<u>370</u>	<u>305</u>	<u>305</u>	<u>305</u>	<u>305</u>	<u>1,620</u>