

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

10721
7600
931111
93108640-3
PD-ACC-939-C1
OPG

Mr. Haldore Hanson
Director General
International Maize and Wheat Improvement Center (CIMMYT)
Londres 40 - 1st Floor
Apartado Postal 6-641
Mexico, D.F.

34p.

DEC 31 1975

Subject: Grant No. AID/ta-G-1257
PIO/T No. 931-11-110-840-73-
3158616

Dear Mr. Hanson:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the Agency for International Development (hereinafter referred to as "A.I.D." and/or "the Grantor"), hereby grants to the International Maize and Wheat Improvement Center (Centro Internacional de Mejoramiento de Maiz y Trigo), hereinafter referred to as "CIMMYT" and/or "the Grantee", the amount of Two Million Five Hundred Fifty Thousand Dollars (\$2,550,000) in support of your program which will be conducted in Calendar Year 1976 to strengthen the worldwide network of international and national institutions engaged in research, consulting, extension and training activities devoted to the improvement of all aspects of maize, barley, and wheat production.

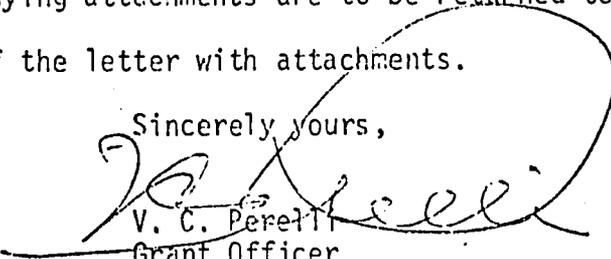
The funds being contributed under this grant, along with contributions from other specified donors, will enable CIMMYT to develop the capacity in developing countries so that the countries themselves can perform the research and production work necessary for continued programs in agriculture. CIMMYT, through bilateral and unilateral arrangements, will continue research, training and cooperative breeding programs and other international activities.

This grant is effective as of the date of this letter and shall continue in effect through December 31, 1976. Funds granted hereunder shall apply to specified costs incurred during the period January 1, 1976 through December 31, 1976.

Funds provided by this grant are to be used exclusively in support of CIMMYT's core budget (unrestricted) which is set forth as part of the total Calendar Year 1976 operating budget, attached hereto and made a part hereof. These funds represent up to 25% of CIMMYT's combined capital and core budget, restricted and unrestricted, for calendar year 1976.

This grant is made on condition that CIMMYT shall carry out the activities as are more fully described in the Program Description (Attachment I) and shall administer the funds in accordance with the aforementioned budget (Attachment II) and the Terms and Conditions hereof including Appendix "A" (Attachment III). Please sign the original and all copies of this letter in the space provided below to acknowledge your understanding of the conditions under which these funds have been granted. The original and five copies of this letter and accompanying attachments are to be returned to my office. You may retain two copies of the letter with attachments.

Sincerely yours,


V. C. Peretti
Grant Officer
Technical Assistance Branch
Central Operations Division
Office of Contract Management

Attachments:

- I. Program Description
- II. Budget
- III. Terms and Conditions including Appendix "A"

ACKNOWLEDGED:

INTERNATIONAL MAIZE AND WHEAT IMPROVEMENT CENTER (CIMMYT)

BY: Haeuro-Hanson

TITLE: Director General

DATE: January 9, 1976

INTERNATIONAL MAIZE AND WHEAT IMPROVEMENT CENTER

(CIMMYT)

CY 1976 Program Description

A. Objectives

1. Wheat, barley and maize are staple foods which make up 60% of the world's cereals (FAO Production Yearbook 1973). These crops are grown on all continents. They provide the principal carbohydrate food and principal protein source for almost half the people in the world. Wheat eaters consume bread, macaroni, couscous, chapati, and noodles; maize eaters consume tortilla, corn bread, gruel, and roasted ears.

2. The Center's Charter of April 12, 1966 states the CIMMYT mission as follows: "To promote and carry out, nationally and internationally, programs to improve in all its aspects maize and wheat production. The Charter permits work by CIMMYT also on "sorghum, rice and other food crops.

3. CIMMYT fulfills its mission in the following ways: (a) conducting research in Mexico and elsewhere (b) distributing superior germ plasm for higher yields, more stable yields, and higher nutritional quality (c) conducting applied training programs for scientists from developing countries; (d) sponsoring technical seminars; (e) publishing information on new technology; (f) consulting with governments in developing countries, and (g) assigning staff members to work in national and regional programs outside Mexico.

B. Activities

1. Wheat Program

a. Bread Wheat Research

The Bread wheat crop in Asia, Africa and Latin America needs more stable resistance to the fungus diseases (stem, leaf, and stripe rust, and Septoria). This is the

No. 1 threat to the bread wheat eaters of the world, and the No. 1 focus of CIMMYT's bread wheat program. Mexican bread wheats which moved to India in the 1960's were then resistant to the three rusts, but mutations of the fungus now make some Mexican varieties vulnerable to attack. They need to be replaced.

Most of the 4,000 crosses which CIMMYT makes each year between varieties of spring bread wheats are aimed at solving this disease problem. This is a complex genetic operation.

CIMMYT's experimental wheats are tested in more than 80 countries. Testing serves several purposes. It enables collaborating countries to select and use CIMMYT materials as they wish. And the testing results guide CIMMYT breeders in their search for disease tolerance, and for "wide adaptation", which is a characteristic enabling a variety to perform well under widely differing climates.

Another approach of the bread wheat researchers is the crossing of winter bread wheats and spring bread wheats. The aim is to transfer from the winter types to the spring types the better root structure of winter wheats, which CIMMYT scientists believe offers hope for drought tolerance. Drought is the greatest threat to the rainfed farmer. The winter-spring crossing program may also supply greater cold tolerance and greater Septoria resistance to the spring bread wheats.

b. Durum Wheat Research

Durum wheat, the ingredient of Italian pasta and Arab couscous, represents a world crop of about 20 million tons and is important in the following places:

- Mediterranean and Near East region
- India
- North America (USA and Canada)
- South America (Argentina, Chile)
- USSR

CIMMYT makes about 3,000 successful durum wheat crosses a year, and tests the progeny in over 40 countries. This breeding program has been making good progress toward higher yields, broader resistance to diseases, wider adaptation for climatic conditions, and shorter maturity. A number of durum-producing countries have released CIMMYT-bred durum varieties to their farmers.

c. Barley Research

Barley is the principal cereal grain consumed by an estimated 100 million people living in areas of low rainfall and short growing season, located in North Africa, Near East, Eastern and Northern Europe, India, People's Republic China, Korea, and higher elevations in South America. Barley sustains some of the world's poorest people, living on marginal agricultural land.

CIMMYT's barley program is three-years-old (6 breeding cycles to the spring of 1975). Good genetic sources of resistance have been identified for major diseases, and these genes are now being concentrated in few desirable plant types. The breeders are employing genetic sources for stronger straw, better root system, better protein content, and the naked (hull-less) grain type which is preferred by people who eat barley.

d. Triticale Research

Triticale is a man-made cereal, a cross between wheat and rye, which is now approaching general commercial use, and offers several advantages over its two parents (judged by current trials), for better disease resistance, better cold tolerance, better protein quality, and wider adaptation. About 600,000 hectares (1.5 million acres) of triticale were grown commercially in 1974, mostly in Europe and North America. and CIMMYT is collaborating with national programs in Asia, Africa, and Latin America, where the new grain is being tested for human food (bread, chapatis, tortillas) and for cattle feed and green forage.

Important progress has been reported during the 1970's by the CIMMYT breeders and their collaborators. The problem of

shrivelled grain is now essentially solved. The test weight of triticale (i.e. weight per bushel of grain) now approximates the standard measure for wheat. In yield trials, triticale now ranks just below the best Mexican bread wheats. Protein quantity in triticale is equal to wheat; and the content of limiting amino acids (a limiting nutritional factor in wheat) is twice as great in triticale.

CIMMYT continues to make 4,000 breeding crosses per year with triticale, to broaden the germ plasm base, and achieve greater stability of yield. CIMMYT's experimental nurseries for triticale are grown in over 30 countries each year.

e. Wheat Collaborative Research

"Collaborative research" is part of CIMMYT's core program performed outside Mexico, in collaboration with strong national programs, in order to do research under conditions of disease, insects, soils, or climatic factors which are not prevalent in Mexico.

Three projects of collaborative research are underway or proposed:

(1) Lebanon: One CIMMYT wheat pathologist is stationed in Lebanon (1975) to organize an early warning system for wind-borne diseases of wheat-barley in the Mediterranean and Near East region. He tests experimental germ plasm under disease conditions of that region, and advises CIMMYT breeders in Mexico on the choice of parental materials which will best serve that region. In 1976 a second pathologist will be added to this service at Beirut. This work is financed by core unrestricted budget.

(2) Andean region -- disease tacking for wheat-barley: One CIMMYT breeder-pathologist will be stationed in Ecuador in 1976 to perform substantially the same services as those performed by staff in Lebanon. Mexican wheats have never performed satisfactorily in the Andean region because of disease conditions different from Mexico. The CIMMYT staff member will focus on wheat programs of Ecuador, Peru, Bolivia, and Colombia but will

also develop Liaison with other countries of South America. The work will be financed by core restricted funds, under negotiation from CIDA.

(3) Triticale -- various countries. Several strong national programs, working on triticale, are being asked to conduct special trials, in cooperation with CIMMYT, on diseases of triticale and other constraints to production.

f. Wheat Regional Services

Wheat "regional services" are part of CIMMYT core program, preformed outside Mexico to provide better services to a group of neighboring wheat growing countries. These services cannot be performed as well from Mexico.

In 1975 CIMMYT stationed one CIMMYT wheat breeder at the high altitude Njoro Station, Kenya to manage a summer wheat nursery project which will enable a number of national programs in the region to produce two cycles of research wheat each year, instead of one. This CIMMYT scientist consulted with governments in the region, circulated a regional nursery, organized a regional workshop of wheat scientists, conducted training within national programs, and advised CIMMYT breeders on the selection of parental materials best suited to East Africa. Selection of wheats which show stem rust resistance in Kenya can serve other countries around the world.

g. Other Wheat Program Units

Here we lump together a number of activities including:

Office of the Wheat Program director
(M.E. Borlaug)

Pathology

Agronomy-physiology

Industrial quality laboratory

International nurseries

Development of new germ plasm, including
wide crosses.

All these units operate as an inter-disciplinary team, and all participate in screening the breeder's work, described under crop research above.

2. Maize Program

a. Maize Breeding

CIMMYT maintains the largest maize germ plasm bank (seedbank) in the world, containing about 12,000 entries, and the unit continues to gather new entries each year (388 in 1974) and to produce fresh supplies of seed for the bank. The bank made 45 shipments in 1974 to 22 countries which requested seed samples for their own research.

Drawing upon this gene bank, and other sources of maize materials, CIMMYT breeders are working on 34 different populations of maize for higher yields, more stable yields, and better quality protein. CIMMYT's lowland tropical station Veracruz State, Mexico, has a climate approximately equal to the lowland areas of Central America, the Caribbean, tropical West Africa, and Southeast Asia. By contrast, CIMMYT's highland stations on the central plateau of Mexico approximate the climatic conditions in highland South America, highland East and West Africa, and South Asia.

The selection criteria for CIMMYT maize breeding include: shorter plants with less lodging (falling over); early maturity (shorter growing season); better disease and insect resistance achieved through genetics, not chemicals; wider range of adaptation to climate; and higher quality protein. These are the qualities governments are seeking.

CIMMYT is working on better nutritional quality in maize by incorporating the opaque-2 gene, which doubles the two amino acids, tryptophan and lysine, and gives to some maize a nutritional value about 95% that of cow's milk (compared to traditional maize which has half the nutritional value of cow's milk).

b. Maize Plant Protection

Insects are more destructive to maize than to wheat. Diseases and insects are more destructive to maize in the tropics than in the temperate zone, because continuous mild weather permits continuous cropping, and therefore, a continuous build-

up of harmful insects and fungus or virus diseases.

CIMMYT's plant protection staff is an integral part of the breeding staff engaged in the following activities:

- 1) Inoculating experimental plots with disease organisms, and infesting the plots with insect populations, in order to test the degree of genetic resistance.
- 2) Spraying part of the same plots with insecticides and fungicides, in order to observe the maximum yield potential of the experimental maize.
- 3) Taking disease and insect "readings" on these plots to help the breeders select the most useful materials.
- 4) Consulting with national maize programs on their pest problems.

c. Maize Agronomy-physiology

Agronomists at CIMMYT test the breeders' best materials, every second generation, for yield and other economic characteristics. These trials help determine what actions the breeders will take in the succeeding cycle.

CIMMYT agronomists also test the breeders' advanced materials on private farms in Mexico. The purpose here is to see, under the conditions of the farmer, how the experimental maize performs compared to the research station. CIMMYT trainees help to lay out the trials on private lands, and thus they gain experience as production agronomists.

The maize physiologist at CIMMYT is studying the effects of weather upon the maize crop, the effects of drought upon different genotypes (plant types); and in general, attempting to answer the question: what limits the yields of maize, and how can the breeders remove limitations. For example: CIMMYT finds that the maize plant in the Mexican tropics produces the same amount of dry matter as the best cornbell maize in the U.S.A.,

but the U.S.A. varieties put more dry matter into grain, and the tropical varieties put more dry matter into stalk and leaves. CIMMYT physiologists are manipulating different genetic and environment conditions to see what modification will make the tropical plant as productive as the temperate plant.

d. Cold Tolerant Sorghum

For more than a decade CIMMYT maize breeders have studied cold-tolerant sorghum as a possible substitute for maize at elevations of more than 2,000 meters in Latin America. Basic germ plasm comes from the highlands of East Africa (Kenya, Ethiopia). Since 1973 a post-doctoral fellow has given full time to this work, under financing of core restricted grants from IDRC. ICRI SAT has endorsed this research in Mexico, which cannot be transferred to Hyderabad, India, for climatic reasons.

e. Maize Collaborative Research

"Collaborative research" is part of CIMMYT's core program performed by CIMMYT outside Mexico in collaboration with strong national programs, in order to observe research under conditions of disease, insects, soils, or climatic factors which are not prevalent in Mexico.

In 1976 two projects in collaborative research will be underway:

(1) Research on 3 diseases on 3 continents: In 1975 CIMMYT began work on three diseases, on three continents, collaborating with strong national programs in each region. The diseases are: downy mildew in Asia, streak virus in Africa, and stunt virus in Central America. There are no CIMMYT staff stationed outside of Mexico for this work; experimental disease observation nurseries are planted by the national program staffs under leadership of CIMMYT scientists travelling from Mexico. These three diseases are not prevalent in Mexico, but represent major constraints to the tropical maize crop outside Mexico. The work is financed partly by core unrestricted budget and partly by a restricted grant of UNDP.

(2) Ecuador -- floury maize breeding: Floury maize is a soft-kernelled maize grown at high altitudes in four Andean countries (Colombia, Ecuador, Peru, and Bolivia)

Almost one million tons of this crop constitute the principal food of the very poor population in the Sierra of those four countries. Research for improvement of this crop cannot be performed effectively outside the region.

In 1976, CIMMYT will post one breeder to the Andean region, probably at Santa Catalina Station near Quito, Ecuador, to engage in research for improvement of floury maize, and to circulate the results of this research to highland stations of the four countries. Financing will be by restricted core grant, under negotiation from CIDA.

f. Maize Regional Service

Maize "regional services" are part of CIMMYT core program, performed outside Mexico, in order to provide better services to a group of neighboring countries. The services also help to assure accurate testing of experimental materials, and thus are an important ingredient in CIMMYT research. These service cannot be performed as well from Mexico.

In 1976 three regional programs would be operative:

(1) Central America regional maize services: In October 1974 CIMMYT assigned two staff members to devote full time to regional services in Central America and the Caribbean region, under a restricted core grant from the Inter-American Development Bank. This work includes consultation to governments, regional nurseries, regional workshops, and training within national programs.

(2) Andean regional maize services: CIMMYT-CIAT reached agreement in 1975 that the two centers would jointly manage the regional maize services for the 5 Andean countries, and that CIMMYT would budget the full cost under its 1976 budget. The regional program would consist of two staff members, jointly selected, stationed at CIAT headquarters, providing services similar to those in Central America. Financing would come from a core restricted grant, under negotiation from CIDA.

(3) Asian regional maize services: CIMMYT-ICRISAT reached agreement in 1975 that ICRISAT would serve as the home

base for CIMMYT services to the regional Asian maize program, and that the services would be staffed and financed by CIMMYT, to serve countries from Pakistan to Indonesia. A UNDP restricted core grant is under negotiation. Services will be similar to those of Central America and the Andean region (above) and will begin in late 1976, conditional on agreement still to be negotiated with the Government of India.

g. Other Maize Program Units

~~Here~~ we again lump a number of activities including:

Office of the maize program director
(F.W. Sprague).

Germ plasm bank and development of new germ plasm.

International nurseries.

Special chemical laboratories (UNDP).

Production training program (UNDP).

Wide crosses of maize.

These units work as an inter-disciplinary team. The end product is the elite experimental variety which can be tested by private farmers in appropriate climatic regions of the world, and governments will then decide whether to recommend release of the experimental variety on a national scale.

3. Research Support

a. Economics

The Year 1974 will be the fifth year that CIMMYT has provided leadership to developing countries for economic studies, which are designed to give support to maize and wheat improvement. Examples of this work include:

- 1) Studies of why farmers are adopting new technology or why not. These studies are being made in 4 maize growing countries in Asia. Africa and Latin America.
- 2) Studies of farm and market level data in developing countries, which will help policy makers in those countries to promote the spread of new technology.

- 3) Joint studies between agronomists and economists, to determine (for example) the minimum amount of data needed to recommend a package of practices to farmers; and the extent to which the risk factor should modify the recommendations to farmers.

CIMMYT economists work as part of the inter-disciplinary team for both maize and wheat improvement. Economic studies are conducted largely outside Mexico, in maize and wheat growing countries, and these studies rely mainly on collaborators who are nationals of each country already trained in the Social Sciences.

Economic regional services: CIMMYT economic staff believes that the development of economic research data which will stimulate rapid adoption of new technology for maize and wheat, can be achieved more effectively in some producing regions, if CIMMYT were able to station a regional economist on a full time basis to collaborate with local researchers in the region.

To try the approach, CIMMYT has applied for a UNDP restricted core grant which would finance one CIMMYT economist at Nairobi to serve the East African region. The economist would collaborate with a CIMMYT regional wheat breeder at Njoro station, Kenya; with the national maize programs of Tanzania and Zaire (special projects); with the promising triticale program in Ethiopia; and assist other governments which are asking help (for example, maize in Malawi, Zambia, and Kenya; wheat in Tanzania and Ethiopia).

b. General Laboratory Services

In order to provide the services of protein analysis, soil analysis, and plant analysis on a centralized basis, CIMMYT created general service laboratories which serve both the maize and wheat programs.

c. Experimental Station Operations

CIMMYT uses experimental land at eight sites in Mexico.

The farthest is 2,000 kilometers from headquarters. Because of distances, CIMMYT maintains separate machinery pools at 6 of the 8 sites, and employs its own farm manager at four of the 8 sites.

The capital cost of land-levelling, fencing, drainage, supplemental irrigation and crop buildings is essentially completed at these stations, except for housing and feeding facilities for CIMMYT trainees, which have been postponed.

d. Statistical Service

In order to provide centralized statistical services for computer analysis of research data, CIMMYT created a general statistical service at the beginning of 1975. This will be used by maize, wheat, and economics.

e. Training, Conferences and Information Services

1) Training

CIMMYT's most important types of training are the 6-9 months in-service applied training for researchers and production agronomists, and the 2-3 month training for laboratory technicians. These courses specialize in "learning by doing". Approximately 100 training fellows a year are enrolled in these courses.

CIMMYT requires a fellowship of \$500 per month for the personal expenses of a fellow in Mexico, plus international round trip travel. The CIMMYT operating budget supports the training services in Mexico.

Other types of training administered by CIMMYT include:

- . Predoctoral fellows who write their theses at CIMMYT, remaining 12-18 months (4 in 1974).
- . Postdoctoral fellows, who work two years as associates on the CIMMYT staff in Mexico (12 in 1974)
- . Senior visiting scientists from developing countries who spend 1-12 months with CIMMYT in Mexico (over 30 in 1974).

Short-term residents, who are generally agricultural administrators or policy makers in developing countries, and spend 1-4 weeks at CIMMYT (over 50 in 1974).

2. Conferences:

CIMMYT has sponsored 1 or 2 international conferences a year. These bring together a few scientists from developed countries, and 40-50 scientists from developing countries, plus the CIMMYT staff from Mexico and abroad.

3. Information Services:

CIMMYT publishes between 10-20 new scientific reports per year. Publications of general interest are printed in three languages (English, Spanish, French) and go to a general mailing list of 6,000 names, including scientists who collaborate with CIMMYT, plus government agencies, universities and libraries around the world.

The audio-visual unit at CIMMYT chooses the illustrations for the CIMMYT publications; prepares and distributes slide lectures on wheat and maize improvement; and mounts visual exhibits for each international conference at CIMMYT.

SPECIAL PROVISIONS

C. Program Reports

1.. The following reports shall be prepared and submitted to AID as stated below:

(a) One hundred (100) copies of the Comprehensive Annual Report on overall program and fiscal matters for the entire calendar year for which the grant was made;

(b) Five (5) copies of the report prepared in connection with the annual International Centers Week. (This report will describe proposed program and funding requirements for the ensuing calendar year.)

(c) Five (5) copies of such other reports as may be prepared or requested from time to time on various other program activities.

2. Copies of the above stated reports shall be submitted to the Technical Specialist:

Dr. Guy B. Baird
Associate Director Research
Technical Assistance Bureau
Office of Agriculture
Agency for International Development
Washington, D.C. 20523

Additionally, one copy of each report shall be submitted to the Grant Officer whose name appears on the grant.

Other

The TA/AGR, Program Specialist, whose name and address follows, should be consulted on all questions of a general program nature:

Mr. John W. Wiles
Program Analyst
Technical Assistance Bureau
Office of Agriculture
Agency for International Development
Washington, D.C. 20523

CINNYT

Net Financial Requirements

1 January - 31 December 1976

(Revised) @

1. Core Operations

Research	\$3,807,000
Research Support Services	1,465,000
Conferences and Training	1,794,000
General Administration	1,631,000
Other	2,010,000

Total Core	\$10,707,000
------------	--------------

Minus income, carryover	774,000
-------------------------	---------

Total Core	9,933,000
------------	-----------

2. Capital Expenditures	509,000
-------------------------	---------

Total Requirements	\$10,442,000
--------------------	--------------

Sources of Funds @

United States (AID) -	\$ 2,550,000
Belgium, Canada, Denmark, Ford Foundation, Germany, IDB, IDRC, Iran, Rockefeller Foundation, UNDP, UNEP	7,480,000*
Other	412,000

	10,442,000
--	------------

@ Based on estimates available in October 75 and on consultations between AID and CGIAR in November 75.

* Specific contributions for those listed not confirmed at the time this budget was prepared (Nov. 75). It is estimated, however, that the 7.601 million is the minimum amount that will subsequently be approved by the respective governments and organizations.

BEST AVAILABLE COPY

TERMS AND CONDITIONS

ARTICLE I. DEFINITIONS

These definitions are applicable throughout this Grant.

a. "Grantor" shall mean the Agency for International Development, an agency of the Government of the United States of America.

b. "Grantee" shall mean the organization or institution to which the Grant is made.

c. "Grant Officer" shall mean the person executing this Grant on behalf of the United States Government and any other government employee who is properly designated Grant Officer; and the term includes, except as otherwise provided in this Grant the authorized representative of a Grant Officer acting within the limits of his authority.

d. "Project Specialist" shall mean the person in the A.I.D. Scientific/Technical Office who has primary program responsibility for the Grant.

e. "Local currency" shall mean the currency of the country in which activities under this Grant take place.

f. "A.I.D." shall mean the Agency for International Development.

g. "Administrator" shall mean the Administrator or Deputy Administrator of the Agency for International Development.

h. "Government" shall mean the Government of the United States.

i. "Mission" shall mean the United States A.I.D. Mission to, principal A.I.D. office or designated A.I.D. representative in, the country in which a program is being carried out.

ARTICLE II - ALLOWABLE COSTS

The Grantee shall be reimbursed for direct costs incurred in implementing the program supported by the Grant during its specified Calendar Year/CORE/Operating Budget provided such costs are incurred in accordance with the terms and conditions of said grant, including the attached budget, and are determined to be allowable, allocable and reasonable in accordance with the principles set forth in sub-part 1-15.3 of the Federal Procurement Regulations as in effect as of the period of this Grant.

ARTICLE III - ACCOUNTING, RECORDS AND AUDIT

The Grantee shall submit to the Grant Officer an annual financial statement certified by an independent public accountant. Financial records covering all phases of the Grantee's program, including documentation to support entries on the account records and to substantiate expenditures shall be maintained in accordance with accounting principles generally accepted in the U.S. and consistently applied, and shall be available for examination by personnel authorized by A.I.D. All such financial records shall be maintained for at least three years after final disbursement of funds under this Grant. The A.I.D. Auditor General and the Comptroller General or their duly authorized representatives reserve the right to conduct an audit of the Grantee's books and records to determine whether the Grantee organization has expended its funds in accordance with the terms and conditions of this Grant.

The Grantee agrees to make available any further information requested by A.I.D. with respect to any questions arising as a result of the audit.

ARTICLE IV - UNEXPENDED FUNDS AND REFUNDS

A. Funds granted hereunder but not disbursed to the Grantee prior to the expiration of the period for which the grant is made or its termination shall revert to A.I.D. Any funds disbursed to but not expended by the Grantee or for which the Grantee has not incurred a legally binding obligation within the purpose of the grant and prior to expiration of the grant period or its termination shall be refunded to A.I.D.

B. If, at any time during the life of grant, it is determined by the Grant Officer that funds provided under the grant have been expended for purposes not in accordance with the terms of the grant, the Grantee shall refund such amounts to A.I.D.

C. Expenditures which may be disallowed at the time of final audit of the grant will be refunded to A.I.D.

D. If use of Grant funds results in accrual of interest to the Grantee or to any entity to which the grant funds are made available for carrying out the purposes of this grant, the Grantee shall refund to A.I.D. an amount equivalent to the amount of interest accrued.

ARTICLE V - TRAVEL AND TRANSPORTATION EXPENSES

Unless otherwise approved in writing by the Grant Officer, the reasonableness of expenses attributable to this grant for travel, related allowances, and shipping will be determined in accordance with the

Standard Government Travel Regulations in effect at the time the costs are incurred.

The Grantee agrees, when such costs are attributable to this grant, to use less-than-first-class transportation unless such use will result in unreasonable delay or increased costs. When travel by other than less-than-first class accommodations becomes necessary, the Grantee shall certify to the facts involved in the voucher or other documents retained as part of his grant records to support his claim for reimbursement and for post audit.

ARTICLE VI - LIMITATION ON TRANSPORTATION

A. All international air shipment of goods, attributable to this Grant, shall be made, to the maximum extent practicable, on U.S. flag carriers. When other than U. S. flag carrier is utilized, the Grantee shall certify to the facts involved in the voucher or other documents retained as part of his Grant records to support his claim for reimbursement and for post audit.

B. International Ocean Transportation. All international ocean transportation of persons and goods which is to be reimbursed in U.S. dollars under this grant shall be by U. S. flag vessels to the extent that they are available. With respect to the transportation of goods, where U. S. flag vessels are not available, or their use would result in a significant delay, the Grantee may obtain a release, in advance, from this requirement from the Resources Transportation Division, Agency for International Development, Washington, D. C. 20523,

giving the basis for the request.

ARTICLE VII - SALARIES AND WAGES

All salaries, wages, fees, stipends and allowances paid from funds provided by this grant shall be in accordance with the Grantee's usual policy and practice. Any deviations from Grantee's policy shall be documented and such documentation shall be retained as part of the grant records for audit by A.I.D. and/or the Comptroller General of the United States.

ARTICLE VIII - PROCUREMENT OF VEHICLES, EQUIPMENT, MATERIALS, SUPPLIES AND SERVICES

A. Except as may be specifically approved or directed in advance by the Grant Officer, or as may be provided in paragraph D, below, all equipment, vehicles, supplies and materials, the costs of which are to be attributed to this Grant and which will be financed with United States dollars, shall be purchased in and shipped from the United States and all services shall be obtained from U.S. sources. In addition, for any U. S. purchase transaction in excess of \$2,500, the Grantee shall notify the seller that the item(s) must be of U. S. source and production and comply with the componentry limitations and other requirements applicable to suppliers under A.I.D. Regulation 1, and that the supplier must execute and furnish Form AID-282 "Suppliers Certificate and Agreement with the Agency for International Development."

B. The Grantee shall obtain competition to the maximum extent practicable for any procurement the cost of which is not to be attributed to this Grant. Procurement by the Grantee without consideration of more than one source must be certified to and supported by adequate justification as part of the permanent grant records. In no event will any procurement be on a cost-plus-a-percentage of cost basis.

C. Procurements in-country, i.e., the country in which the Grantee's facility is physically located, which are less than \$2,500.00 and are for materials (regularly available and normally sold on the local market) which are to be consumed or expended in the performance of this grant, are exempt from the conditions set forth in Paragraph A. hereinabove, provided that the origin of such materials and supplies and the component parts thereof is a free world country as described in A.I.D. geographic Code 935."

D. Notwithstanding the provisions of paragraph A. above, an amount of up to \$ -0- of grant funds provided hereunder may be used to defray expenditures for in-country costs of local source and origin for items such as local staff, local labor, and non-expendable supplies, materials, equipment, etc. For the purpose of interpreting this clause all bona fide employees of the grantee both local direct hire and the international staff are exempt from the above restriction on the use of grant funds.

ARTICLE IX - TITLE TO AND USE OF PROPERTY

Title to property such as vehicles, equipment, library acquisitions and other similar items purchased with grant funds vests in the Grantee institution. All such property must be used during the grant period for activities furthering the purpose of program for which it was purchased and may not be disposed of, provided it has useful life, without the prior written consent of the grant officer.

ARTICLE X - CAPITAL EXPENDITURES

A. Grant funds may not be used for new construction, alteration or improvements to buildings, fixtures, or facilities without the prior approval of the Grant Officer.

ARTICLE XI - CONVERSION OF UNITED STATES DOLLARS TO LOCAL CURRENCY

Whenever practicable Grantee agrees to convert United States dollars to local currency through the United States Disbursing Officer, American Embassy. When circumstances, certified to by the Grantee, do not permit compliance with this procedure, the Grantee may convert U. S. dollars to local currency through any local bank or accredited financial institution.

ARTICLE XII - TERMINATION

This Grant may be terminated, at any time, in whole or in part, upon written notice from the Grant Officer to the Grantee. Upon

the Grantee's receipt of notice of such termination, it shall take immediate action to minimize all additional obligations financed by this Grant and shall cancel such unliquidated obligations whenever possible. No further reimbursement shall be made after the effective date of such termination, repay to the Grantor all unexpended portions of funds theretofore paid by the Grantor to the Grantee which are not otherwise obligated by a legally binding transaction within the purposes of this Grant. Should the funds paid by the Grantor prior to termination of this Grant be insufficient to cover the Grantee's obligations pursuant to the aforementioned legally binding transactions, the Grantee may submit to the Grantor within ninety (90) calendar days after the effective date of such termination, a written claim covering such obligations and, subject to the limitations contained in this Grant, the Grantor shall determine the amount or amounts to be paid by the Grantor to the Grantee under such claim.

ARTICLE XIII - OFFICIALS NOT TO BENEFIT

No member or delegate to the Congress or resident Commissioner shall be admitted to any share or part of the grant or to any benefit that may arise therefrom.

ARTICLE XIV - COVENANT AGAINST CONTINGENT FEES

The Grantee warrants that no person or selling agency has been employed or retained to solicit or secure this grant upon an agreement

or understanding for a commission, percentage, brokerage, or contingent fee except bona fide employees or a bona fide established commercial or selling agencies maintained by the Grantee for the purpose of securing business. For breach or violation of this warranty, A.I.D. shall have the right to cancel this grant without liability or, in its discretion, to deduct from the grant amount, or otherwise receive the full amount, of each commission, percentage, brokerage, or contingent fee.

ARTICLE XV - CONFLICT OF INTEREST

Other than in the performance of duty as specified by the Grantee in accordance with this grant, an employee or consultant assigned by the Grantee, whose expenses may be reimbursable hereunder shall not engage, directly or indirectly, either in his own name or in the name or through the agency of another person, in any business, profession, or occupation in any country to which he is assigned; nor shall he make loans to or investments in any business, profession or occupation in any country to which he is assigned.

ARTICLE XVI - SUBORDINATE AGREEMENTS

The placement of subordinate agreements, grants, or contracts (the costs thereunder which are attributable to this grant) with other organizations, firms or institutions is subject to the prior written consent of the Grant Officer. In no event shall any such subordinate agreement, grant, or contract be on a cost-plus-a-percentage-of-cost basis. Subordinate contractors (including suppliers) shall be

selected on a competitive basis to the maximum practicable extent consistent with the obligations and requirements of this grant.

ARTICLE XVII - PATENTS

Grantee agrees to notify the Grant Officer, in writing, of any invention or discovery conceived or first actually reduced to practice in the course of or under this grant. The Grant Officer will determine the patent rights to be afforded the Grantee in accordance with the Presidential Memorandum and Statement of Government Patent Policy (36 FR 16887).

ARTICLE XVIII - AMENDMENT

The Grant Agreement may be amended by formal modifications to the basic grant document or by means of an exchange of letters between the A.I.D. Grant Officer and an appropriate official of the Grantee.

ARTICLE XIX - GRANT AGREEMENT

The letter to the Grantee signed by the Grant Officer, and all attachments identified therein, which have been reviewed and agreed to by the Grantee, constitute the Grant Agreement.

ARTICLE XX - PUBLICATIONS

A. As agreed upon by A.I.D. and the Grantee, appropriate acknowledgement of A.I.D.'s support must be made in connection with the publication of any material based on activities conducted under the grant. The acknowledgement should also state that the information and conclusions in the paper do not necessarily reflect the position of A.I.D. or the U.S. Government.

B. TA/AGR will be informed of all publications and dissertations developed through Grantee's research program, and Grantee will provide at least two (2) copies of such publications as requested by TA/AGR.

C. The Grantee is permitted to secure copyright to any publication produced or composed under this Grant. Provided, the Grantee agrees to and does hereby grant to the Government a royalty-free, non-exclusive and irrevocable license throughout the world to use, duplicate, disclose, or dispose of such publications in any manner and for any purpose and to permit others to do so.

D. Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government under any patent.

ARTICLE XXI- NOTICES

Any notice given by any of the parties hereunder, shall be sufficient only if in writing and delivered in person or sent by telegraph, cable, registered or regular mail as follows:

TO A.I.D. : Grant Officer
Office of Contract Management
Central Operations Division
Agency for International Development
Washington, D. C. 20523

TO GRANTEE: At Grantee's address shown in this Grant, or to such other address as either or such parties shall designate by notice given as herein required. Notices hereunder, shall be effective when delivered in accordance with this clause or on the effective date of the notice, whichever is later.

ATTACHMENT III - APPENDIX "A"

FEDERAL RESERVE LETTER OF CREDIT

FOR ADVANCE PAYMENT (APR. 1975)

(a) AID shall open a Federal Reserve Letter of Credit in favor of the Grantee in the amount of \$2,550,000 (for amending existing grants, add the word "remaining" here) available for obligation under this grant against which the grantee may present payment vouchers. The amount drawn by the grantee during any calendar (xxxxx or quarter) of this grant shall not exceed \$637,500 without the prior written authorization of the grant officer. The amount of the payment voucher shall not be in an amount less than \$10,000 nor more than \$1,000,000 but within the specific dollar ceiling on (monthly or quarterly) withdrawals.

(b) In no event shall the accumulated total of all such payment vouchers exceed the amount of the Federal Reserve Letter of Credit.

(c) If at any time, the grant officer determines the grantee has presented payment vouchers in excess of the amount or amounts allowable in (a) and (b) above, the grant officer may: (1) cause the Federal Reserve Letter of Credit to be suspended or revoked; or (2) direct the grantee to withhold submission of payment vouchers until such time as, in the judgment of the grant officer, an appropriate level of actual, necessary and allowable expenditures has occurred or will occur under this grant, and/or (3) request the grantee to repay to AID the amount of such excess. Upon receipt of the grant officer's request for repayment of excess advance payments, the grantee shall promptly comply with such request.

(d) Procedure for Grantee.

(1) After arranging with a commercial bank of its choice for operation under this arrangement and obtaining the name and address of the Federal Reserve Bank or branch serving the commercial bank, the Grantee shall deliver three originals of Standard Form 1194, "Authorized Signature Card for Payment Vouchers on Letters of Credit" signed by those official(s) authorized to sign payment vouchers against the Federal Reserve Letter of Credit and by an official of the Institution who has authorized them to sign.

(2) Upon execution of the grant the grantee shall receive one certified copy of the Federal Reserve Letter of Credit.

(3) The grantee shall confirm with his commercial bank that the Federal Reserve Letter of Credit has been opened and is available if funds are needed.

BEST AVAILABLE COPY

(4) To receive payment, the Grantee shall:

(i) Periodically, although normally not during the last five days of the month, prepare payment vouchers (Form TUS 5401) in an original and three copies.

(ii) Have the original and two copies of the voucher signed by the authorized official(s) whose signature(s) appear on the Standard Form 1194.

(iii) Present the original, duplicate, and triplicate copy of the Form TUS 5401 to his commercial bank.

(e) Retain the quadruplicate copy of the voucher

(5) Each drawdown should be initiated at approximately the same time that checks are issued by the organization in payment of program liabilities including those for allowable indirect costs, and in an amount approximately equal to the Federal share of such payments. Therefore, there is no necessity for the recipient organization to maintain balances of Federal cash other than the small balance necessary to provide for an element of bank float.

(6) A report of expenditures is prepared and submitted to the Office of Financial Management, within thirty days of disbursement. This report, submitted on Standard Form 1034, "Public Voucher for Purchases and Services Other Than Personal", and supported by certifications, listing of withdrawals, and documentation as required, itemizes expenditures made, identifying funds expended by line item of the approved budget and/or category supporting the agreement.

(7) The report of expenditures on Standard Form 1034 is reviewed against the grant provisions, and any disbursement improper under the grant is disallowed. The grantee is notified of the reason for the disallowance and is directed to adjust the next periodic report of expenditures to reflect the disallowance and to reduce its next payment voucher against the Federal Reserve Letter of Credit by the amount of the disallowance.

(8) Simultaneously with the submission of the report of expenditures, the grantee submits to the Controller a status report on the Federal Reserve Letter of Credit as of the close of the period covered by the report of expenditures. The report is prepared in the following format:

Status of Funding Report

Federal Reserve Letter of Credit (FRLC)

No. _____

BEST AVAILABLE COPY

Period from _____ through _____

A. Letter of Credit Position

1. Current amount of FRLC (including amendments) through reporting period \$ _____
2. Payment Vouchers on Letter of Credit presented (Form TUS 5401)
 - a. Credited prior to reporting period \$ _____
 - b. Credited during reporting period via TUS 5401 Voucher Nos. _____ through _____ inclusive \$ _____
 - c. Presented but not credited during report via TUS 5401's numbered _____ through _____ inclusive \$ _____
3. Total of all Payment Vouchers against FRLC credited or presented \$ _____
4. Balance of FRLC not drawn or requested this reporting period \$ _____

B. Cash Position

1. Cash on hand at beginning of period \$ _____
2. Plus: cash drawn during period \$ _____
3. Plus: refunds, rebates or other amounts received, to the extent allocable to disbursements charged against this FRLC \$ _____
4. Total cash available (sum of 1, 2, and 3) \$ _____
5. Less: disbursements during period \$ _____
6. Balance of cash on hand at close of reporting period \$ _____
7. Estimated number of days requirements covered by balance on hand (Item 6 above)
Days: _____
8. Advances to subcontractors; \$ _____ (included in B. 6 above)

BEST AVAILABLE COPY

(f) Refund of Excess Funds

(1) If all costs have been settled under the grant and the grantee fails to comply with the grant officer's request for repayment of excess Federal Reserve Letter of Credit funds, the Government shall have the right, on other grants held with the Grantee, to withhold payment of Federal Reserve Letter of Credit or other advances and/or withhold reimbursements due the Grantee in the amount of the excess being held by the Grantee.

(2) If the Grantee is still holding excess Federal Reserve Letter of Credit funds on a grant under which the work has been completed or terminated but all costs have not been settled, the Grantee agrees to:

(i) Provide within 30 days after requested to do so by the Grant officer, a breakdown of the dollar amounts which have not been settled between the Government and the Grantee (The Grant officer will assume no costs are in dispute if the Grantee fails to reply within 30 days.);

(ii) Upon written request of the grant officer, return to the Government the sum of dollars, if any, which represents the difference between (1) the Grantee's maximum position on claimed costs which have not been reimbursed and (2) the total amount of unexpended funds which have been advanced under the grant; and

(iii) If the Grantee fails to comply with the grant officer's request for repayment of excess Federal Reserve Letter of Credit funds, the Government shall have the right, on other grants held with the Grantee, to withhold payment of Federal Reserve Letter of Credit or other advances and/or withhold reimbursements due the Grantee in the amount of the excess being held by the Grantee.

BEST AVAILABLE COPY

APPENDIX "A"

PAYMENT PROVISIONS

ARTICLE I - DISBURSEMENT OF FUNDS AND FISCAL REPORTS

A.I.D. will disburse funds promptly to Grantee, on a reimbursement basis, under the following procedure:

At the convenience of the Grantee but not more often than once a month, the Grantee will submit to the Office of Financial Management, A.I.D. Voucher Form 1034 (original) and three copies of Voucher Form 1034(a), properly executed, totalling Grantee's expenditures during the period covered for which reimbursement hereunder is sought, together with an original and two copies of a certified fiscal report rendered by the Grantee in a form and manner satisfactory to A.I.D. substantially as follows:

Project: _____ AID Grant Period: _____ No. _____

Category (From Attachment II)	<u>1974</u>	<u>Expenditure</u>	<u>Grant Fund Expenditures</u>
	<u>Budget</u>	<u>To Date</u>	<u>To Date</u> <u>this period</u>
\$ _____	\$ _____	\$ _____	\$ _____
_____	_____	_____	_____

The fiscal report shall include a certification signed by an authorized representative of the Grantee as follows:

"The undersigned hereby certifies: (1) that payment of the sum claimed under the voucher is proper and due the terms of the grant; and (2) that the information on the fiscal report is correct and such detailed supporting information as A.I.D. may require will be furnished by the Grantee

promptly to A.I.D. upon request.

BY _____

TITLE _____

DATE _____

An original and two copies of a final fiscal report shall be submitted to the Office of Financial Management, A.I.D. within 90 days of the end of the calendar quarter in which the period for which the grant was made ends. The final fiscal report shall also be accompanied by an original and three (3) copies of SF-1034 and SF-1034(a), marked "Final Voucher."

The parties agree that, if after reviewing the fiscal reports or other cost data, it is determined by the Grant Officer that funds provided under the grant have been expended for purposes not in accordance with the terms of the grant, the Grantee will refund such amounts as directed by the Grant Officer.