

PD-AAA-356-A

512-21-110-321



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

512-L-090

5120321 (6)

UNITED STATES COORDINATOR  
ALLIANCE FOR PROGRESS

A.I.D. Loan No. 512-L-090 3p  
(Ref: AID-DLC/P-2004)

LOAN AUTHORIZATION

Provided from: Alliance for Progress Funds  
BRAZIL: Higher Agricultural Education Loan

Pursuant to the authority vested in the Deputy U. S. Coordinator, Alliance for Progress, by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan ("Loan") pursuant to Part I, Chapter 2, Title VI, Alliance for Progress to the Government of Brazil ("Borrower") of not to exceed seven million six hundred thousand dollars (\$7,600,000) to finance dollar costs of establishing and implementing a system for improving Government of Brazil programs in graduate education in general and in graduate agricultural education in particular, subject to the following terms:

1. Interest and Terms of Repayment

Borrower shall repay the Loan in United States dollars within forty (40) years from the date of the first disbursement under the Loan, including a grace period of not to exceed ten (10) years. Borrower shall pay interest in United States dollars at the rate of two percent (2%) per annum during the grace period and three percent (3%) thereafter on the disbursed balance of the loan and on any due and unpaid interest thereon.

2. Other Terms and Conditions

(a) Except for marine insurance and ocean shipping, goods and services financed under the loan shall have their source and origin in countries included in A.I.D. Geographic Code 941. Marine insurance financed under the Loan shall have its source and origin in Brazil or in any country included in A.I.D. Geographic Code 941; provided, however, that such insurance may be financed under the loan only if it is obtained on a competitive basis and any claims thereunder are payable in convertible currencies. Ocean shipping financed under the Loan shall be procured in any country included in A.I.D. Geographic Code 941.

(b) Prior to the first disbursement or the issuance of any commitment documents under the Loan, Borrower shall submit to A.I.D. in form and substance satisfactory to A.I.D.:

(i) a detailed description of the central administrative

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and planning unit established for coordinating the program within the Ministry of Education and Culture's Department of University Affairs, including staff qualifications and proposed operating procedures;

- (ii) evidence that funds will be provided by the Borrower to cover local currency costs during the first year of the program; and
- (iii) a time-phased implementation plan for the execution of the central level technical assistance and initial participant training activities pursuant to the program, which plan is satisfactory to A.I.D.

(c) Prior to the first disbursement of loan funds or issuance of commitment documents for project activities other than the central level technical assistance and initial participant training activities, the Borrower will submit to A.I.D. in form and substance satisfactory to A.I.D.:

- (i) A plan for the overall development of graduate education in agriculture based on the results of a thorough demand study;
- (ii) A manual establishing guidelines for university participation in the program and for the preparation of university development plans; and
- (iii) A detailed plan, including the methodology to be used, which plan shall be satisfactory to A.I.D., for performing an annual evaluation of the specific administrative and technical assistance phases of the program.

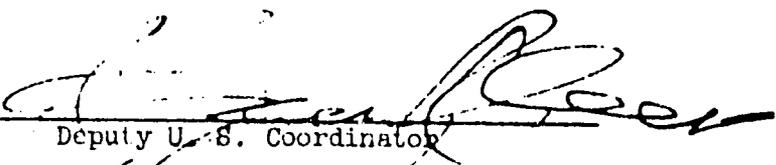
(d) Prior to the end of the first year of implementation of the program, and annually thereafter, the Borrower shall provide to A.I.D. a revised financial plan for the dollar and local costs of the program for the following year. This revised financial plan shall be accompanied by evidence satisfactory to A.I.D. that funds are available to finance the local costs as shown in the revised plan.

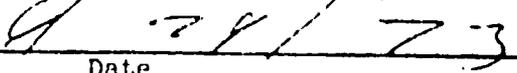
(e) The Borrower shall covenant:

- (i) that each university receiving assistance in the development of graduate centers pursuant to the program financed under this loan, will enter into

an arrangement with a lesser developed undergraduate school whereby said university agrees to provide assistance in strengthening the programs of the undergraduate school;

- (ii) that except as A.I.D. may otherwise agree in writing, A.I.D. shall approve: the scopes of work for the technical assistance contracts; the contractors which will perform under said technical assistance contracts; and, any personnel of said contractors financed pursuant to the loan;
  - (iii) that except as A.I.D. may otherwise agree in writing, Borrower and A.I.D. shall conduct jointly on an annual basis, throughout the life of the loan, a review of the program's implementation;
  - (iv) that except as A.I.D. may otherwise agree in writing, all training outside Brazil which is financed from the loan, shall have commenced prior to the fourth year of the program;
  - (v) that, wherever feasible, training and research performed pursuant to the loan shall comprehend studies of income distribution and the effects of decisions in the agricultural sector on the distribution of income and on employment; and
  - (vi) that it shall provide not less than the cruzeiro equivalent of U. S. \$8 million as its financial contribution to the program.
- (f) The loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

  
Deputy U. S. Coordinator

  
Date

PDAAA-356-B1

512-21-110-321

512-4-090 49p  
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LOAN AGREEMENT  
Between the  
FEDERATIVE REPUBLIC OF BRAZIL  
and the  
UNITED STATES OF AMERICA  
HIGHER AGRICULTURAL EDUCATION

CONFORMED COPY

RECORD COPY

A. I. D. Loan Nº 512-L-090

LOAN AGREEMENT

Between The

FEDERATIVE REPUBLIC OF BRAZIL

and the

UNITED STATES OF AMERICA

For

HIGHER AGRICULTURAL EDUCATION

CONFORMED COPY

Dated: January 30, 1974

LOAN AGREEMENT dated 30th day of January , 1974 between the Federative Republic of Brazil ("Borrower") and the UNITED STATES OF AMERICA, acting through the AGENCY FOR INTERNATIONAL DEVELOPMENT ("A.I.D. ").

## ARTICLE I

### The Loan

SECTION 1.01. The Loan. A.I.D. agrees to lend to the Borrower in furtherance of the Alliance for Progress and pursuant to the Foreign Assistance Act of 1961, as amended, an amount not to exceed seven million six hundred thousand United States Dollars (\$7,600,000) ("Loan") to assist the Borrower in carrying out the program referred to in Section 1.02 ("Program"). The Loan shall be used exclusively to finance United States dollar costs of goods and services required for the Program ("Dollar Costs"). The aggregate amount of disbursements under the Loan is hereinafter referred to as "Principal"

SECTION 1.02. The Program. The program consists of an undertaking by the Government of Brazil to develop and implement a system for improving the planning, management and coordination of its programs in graduate education in general and expanding and improving graduate education programs in agriculture in particular.

The Program will be conducted by the Ministry of Education and Culture ("MEC"). The Program is described more fully in Annex 1, attached hereto, and made a part hereof which Annex may be modified in writing by mutual agreement.

SECTION 1.03. Executing Agency. The Borrower hereby designates MEC as its executing agency.

## ARTICLE II

Loan Terms

SECTION 2.01. Interest. The Borrower shall pay to A.I.D. interest which shall accrue at the rate of two percent (2%) per annum for ten years following the date of the first disbursement hereunder and at the rate of three percent (3%) per annum thereafter on the outstanding balance of Principal and on any due and unpaid interest. Interest on the outstanding balance shall accrue from the date of each respective disbursement (as such date is defined in Section 7.03), and shall be computed on the basis of a 365-day year. Interest shall be payable semiannually. The first payment of interest shall be due and payable no later than six (6) months after the first disbursement hereunder, on a date to be specified by A.I.D.

SECTION 2.02. Repayment. The Borrower shall repay to A.I.D. the Principal within forty (40) years from the date of the first disbursement hereunder in sixty-one (61) approximately equal semi-annual installments of Principal and interest. The first installment of Principal shall be payable nine and one-half (9-1/2) years after the date on which the first interest payment is due in accordance with Section 2.01. A.I.D. shall provide the borrower with an amortization schedule in accordance with this Section after the final disbursement under the Loan.

SECTION 2.03. Application, Currency and Place of Payment.

All payments of interest and Principal hereunder shall be made in United States dollars and shall be applied first to the payment of interest due and then to the repayment of Principal. Except as A.I.D. may otherwise specify in writing, all such payments shall be made to the International Loan Branch, C/ACC/ILB, Agency for International Development, Washington, D.C. 20523, U.S.A., and shall be deemed made when received by the Office of the Controller.

SECTION 2.04. Prepayment. Upon payment of all interest and refunds then due, the Borrower may prepay, without penalty, all or any part of the Principal. Any such prepayment shall be applied to the installments of Principal in the inverse order of their maturity.

SECTION 2.05. Renegotiation of the Terms of the Loan. The Borrower agrees to negotiate with A.I.D., at such time or times as A.I.D. may request, an acceleration of the repayment of the Loan in the event that there is any significant improvement in the internal and external economic and financial position and prospects of the Federative Republic of Brazil.

## ARTICLE VII

Conditions Precedent to DisbursementSECTION 3.01. Conditions Precedent to Initial Disbursement.

Prior to the first disbursement or the issuance of the first Letter of Commitment under the Loan, the Borrower and MEC shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.:

(a) An opinion of the highest legal officer of the Ministry of Finance or of legal counsel satisfactory to A.I.D. that:

(i) This Agreement has been duly authorized and/or ratified by, and signed on behalf of the Borrower, that it has been registered as required by the law in Brazil, and that it constitutes a valid and legally binding obligation of the Borrower in accordance with its terms; and

(ii) If required by the law of Brazil, the Program has been included in the Pluriannual Investment Budget and that said Budget has been enacted.

(b) A statement of the person or persons holding or acting in the Offices of the Borrower specified in Section 9.02 and a specimen signature of each person specified in such statement.

- (c) Evidence of satisfactory arrangements with appropriate monetary authorities for the remittance of dollars to A.I.D. in satisfaction of Borrower's obligations under this Agreement.
- (d) A detailed description of the central administrative and planning unit established for coordinating the program within the Ministry of Education and Culture's Department of University Affairs, including staff qualifications and proposed operating procedures.
- (e) Evidence that funds will be provided by the Borrower to cover local currency costs during the first year of the Program.
- (f) A time-phased implementation plan for the execution of the central level technical assistance and initial participant training activities pursuant to the program, which plan is satisfactory to A.I.D.

SECTION 3.02. Conditions Precedent to Disbursement for Activities other than the Central Level Technical Assistance and Initial Participant Training Activities. Prior to the first disbursement of Loan funds or issuance of commitment documents for project activities other than the central level technical assistance and initial participant training activities, the Borrower will submit to A.I.D. in form and substance satisfactory to A.I.D.:

- (a) A Plan for the overall development of graduate education in agriculture based on the results of a thorough demand study;
- (b) A manual establishing guidelines for university participation in the Program and for the preparation of development plans in the agrarian sciences which relate to overall university planning.
- (c) A detailed descriptive plan, including the methodology to be used, which plan shall be satisfactory to A.I.D. , for performing an annual evaluation of the Program.

SECTION 3.03. Conditions Precedent to Subsequent Disbursement.

Prior to the end of the first year of implementation of the Program, and annually thereafter, the Borrower shall provide to A.I.D. a revised financial plan for the dollar and local costs of the Program for the following year. This revised financial plan shall be accompanied by evidence satisfactory to A.I.D. that funds are available to finance the local costs as shown in the revised plan.

SECTION 3.04. Terminal Dates for Meeting Conditions Precedent to Disbursement.

- (a) If all of the conditions specified in Section 3.01 shall not have been met within ninety days (90) 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 giving written notice to the Borrower. Upon the giving of such notice, this Agreement and all obligations of the parties hereunder shall terminate.

(b) (i) If all of the conditions specified in Section 3.02 shall not have been met within one hundred and fifty days (150) from the date of this Agreement, or such later date as A.I.D. may agree to in writing; and/or

(ii) If the conditions specified in Section 3.03 shall not have been met within the first year of implementation of the Program or annually thereafter or on such later date or dates as A.I.D. may agree to in writing;

A.I.D. , at its option, may cancel the then undisbursed balance of the amount of the Loan and/or may terminate this Agreement by giving written notice to the Borrower. In the event of a termination, upon the given of notice, the Borrower shall immediately repay the Principal outstanding and shall pay any accrued interest and, upon receipt of such payments in full, this Agreement and all obligations of all parties hereunder shall terminate.

SECTION 3.05. Notification of Meeting of Conditions Precedent to Disbursement. A.I.D. shall notify the Borrower upon determination

by A.I.D. that the conditions precedent to disbursement specified in Sections 3.01, 3.02, and 3.03 have been met.

## ARTICLE IV

General Covenants and WarrantiesSECTION 4.01. Execution of the Program.

- (a) The Borrower shall carry out the Program in a timely manner, and in conformity with sound technical financial and administrative practices.
- (b) The Borrower shall cause the Program to be carried out in conformity with all of the plans, specifications, contracts, schedules, criteria and Program documents approved by A.I.D. including all modifications therein, pursuant to this Agreement.

SECTION 4.02. Funds and Other Resources to be Provided by Borrower. The Borrower shall provide or cause to be provided promptly as needed all funds, in addition to the Loan, and all other resources required for the punctual and effective carrying out of the Program.

SECTION 4.03. Continuing Consultation. The Borrower, MEC, and A.I.D. shall cooperate fully to assure that the purpose of the Loan will be accomplished. To this end, the Borrower, MEC, and A.I.D. shall, from time to time, at the request of either party, conduct evaluations, exchange views through their representatives with regard to the progress of the Program, the performance by the Borrower and MEC of their obligations under this Agreement,

the performance of other participating entities involved in the Program, and other matters relating to the Program.

SECTION 4.04. Management. The Borrower shall provide, or cause to be provided, qualified and experienced management for the Program and it shall train such staff as may be appropriate for the maintenance and efficient operation of the Program.

SECTION 4.05. Taxation. This Agreement, the Loan, and any evidence of indebtedness issued in connection herewith shall be free from, and the Principal and interest shall be paid without deduction for and free from any taxation or fees imposed under the laws in effect in Brazil. Loan Funds shall not be used to finance identifiable taxes, tariffs, duties, and other levies imposed under the laws in effect in Brazil upon (a) any United States contractor, including any consulting firm, any personnel of such contractor financed under the technical assistance portion of the Loan, and any property or transactions relating to such contracts, and (b) any commodity procurement transaction financed under the Loan.

SECTION 4.06. Utilization of Goods and Services.

(a) Goods and services financed under the Loan shall be used exclusively for the Program, except as A.I.D. may otherwise agree in writing. Upon completion of the Program or at such other time as goods financed under

the Loan can no longer usefully be employed for the Program, the Borrower may use or dispose of such goods in such manner as the parties hereto may mutually agree to in writing prior to such use or disposition.

- (b) Except as A.I.D. may otherwise agree in writing, no goods or services financed under the Loan shall be used to promote or assist any foreign aid project or activity associated with or financed by any country not included in Code 955 of the A.I.D. Geographic Code Book as in effect at the time of such use.

SECTION 4.07. Disclosure of Material Facts and Circumstances.

The parties hereto represent that they have disclosed all relevant facts and circumstances that might affect the discharge of their obligations under this Agreement and that such facts and circumstances disclosed during the course of obtaining the Loan are to the best of their knowledge accurate and complete. The parties agree to advise each other of any facts and circumstances that may hereafter arise that might materially affect, or that it is reasonable to believe might materially affect, the Program or the discharge of their obligations under this Agreement.

SECTION 4.08. Maintenance and Audit of Records. The Borrower, and BEC shall maintain, or cause to be maintained, in accordance with

sound accounting principles and practices consistently applied, books and records relating both to the Program and to this Agreement. Such books and records shall, without limitation, be adequate to show:

- (a) The receipt and application of all funds disbursed by A.I.D. pursuant to this Agreement and any other parties obligated to contribute funds;
- (b) The receipt and use made of goods and services acquired with funds disbursed pursuant to this Agreement;
- (c) The nature and extent of solicitations of prospective suppliers of goods and services acquired;
- (d) The basis of the award of contracts and orders to successful bidders;
- (e) The basis of payment made to contractors and other payees; and
- (f) The progress of the Program.

Such books and records shall be regularly audited, in accordance with sound auditing standards, for such period and at such intervals as A.I.D. may require, and shall be maintained for five years after the date of the last disbursement by A.I.D. or until all sums due A.I.D. under this Agreement have been paid, whichever date first occurs.

SECTION 4.09. Reports. The Borrower and IEC shall furnish to A.I.D. such information and reports relating to the Loan and to the Program as A.I.D. may request.

SECTION 4.10. Inspections. The authorized representatives of A.I.D. shall have the right at all reasonable times to inspect the Program, the utilization of all goods and services financed by Loan funds or by the contributions of other parties, and the books, records and other documents of the Borrower and MEC relating to the Program and the Loan. The Borrower and MEC shall cooperate with A.I.D. to facilitate such inspections.

## ARTICLE V

Covenants

SECTION 5.01. Changes. The parties agree to concur before putting into effect any significant or substantial changes in plans, documents, manuals or other evidence submitted in response to Article III of this Agreement.

SECTION 5.02. Assistance Between Universities. Each university receiving assistance in the development of graduate centers pursuant to the Program financed under this Loan, shall enter into an arrangement with a lesser developed undergraduate school whereby said university agrees to provide assistance in strengthening the programs of the undergraduate school.

SECTION 5.03. Approval of Contracts. Except as A.I.D. may otherwise agree in writing, the Borrower and A.I.D. shall approve: the scopes of work for the technical assistance contracts; the contractors which will perform under said technical assistance contracts; and, any personnel of said contractors financed pursuant to the Loan.

SECTION 5.04. Program Review. Except as A.I.D. may otherwise agree in writing, Borrower and A.I.D. shall conduct jointly on an annual basis, throughout the life of the Loan, a review of the Program's implementation.

SECTION 5.05. Training. Except as A.I.D. may otherwise agree in writing, all training of a period longer than one year outside Brazil which is financed from the Loan shall have commenced prior to the fourth year of the Program.

SECTION 5.06. Income Distribution. Wherever feasible, training and research performed pursuant to the Loan shall comprehend studies of income distribution and the effects of decisions in the agriculture sector on the distribution of income and on employment.

SECTION 5.07. Borrower Funding. The Borrower shall provide not less than the cruzeiro equivalent of U.S. \$8 million as its financial contribution to the Program.

SECTION 5.08. Standby Funding Commitment by Borrower. In the event that A.I.D. suspends or cancels disbursements for any reason whatsoever, or A.I.D. takes any action provided for in Article VIII of this Agreement, Borrower agrees to provide the additional funds required for the timely completion of work already begun under the Program.

## ARTICLE VI

Procurement

SECTION 6.01. U.S. Dollar Procurement. Except for marine insurance and ocean shipping, goods and services financed under the Loan shall have their source and origin in countries included in A.I.D. Geographic Code 941. Marine insurance financed under the Loan shall have its source and origin in Brazil or in any country included in A.I.D. Geographic Code 941; provided, however, that such insurance may be financed under the Loan only if it is obtained on a competitive basis and any claims thereunder are payable in convertible currencies. Ocean shipping financed under the Loan shall be procured in any country included in A.I.D. Geographic Code 941.

SECTION 6.02. Eligibility Date. Except as A.I.D. may otherwise agree in writing, no goods or services may be financed under the Loan, which are procured pursuant to orders or contracts firmly placed or entered into prior to the date of this Agreement.

SECTION 6.03. Goods and Services not Financed under Loan. Except as the parties may agree in writing, the goods and services procured for the Program but not financed under the Loan, shall have their source and origin in countries included in Code 955 of the A.I.D. Geographic Code Book as in effect at the time orders are placed for such goods and services.

SECTION 6.04. Implementation of Procurement Requirements.

The definitions applicable to the eligibility requirements of Sections 6.01, and 6.03 will be set forth in detail in Implementation Letters.

SECTION 6.05. Procurement Acceptable to A.I.D. All procurement of goods and services under the Loan shall be made in a manner acceptable to A.I.D. as prescribed in Implementation Letters.

SECTION 6.06. Information and Marking. Borrower shall give publicity to the Loan and the Program as a program of United States aid in furtherance of the Alliance for Progress as prescribed in Implementation Letters.

SECTION 6.07. Shipping and Insurance.

- (a) U.S. dollar procurement financed under the Loan shall be transported to Brazil on flag carriers of any country included in Code 935 of the A.I.D. Geographic Code Book as in effect at the time of the shipment. Ocean shipping financed under the Loan shall be procured in any country included in the A.I.D. Geographic Code 941.
- (b) At least fifty percent (50%) of the gross tonnage of such procurement financed under the Loan (computed separately for dry bulk carriers, dry cargo liners, and tankers) which shall be transported on ocean vessels shall be transported on privately owned United States flag

commercial vessels unless A.I.D. shall determine that such vessels are not available at fair and reasonable rates for United States commercial vessels. No such goods may be transported on any ocean vessel (or aircraft): (i) which A.I.D., in a notice to the Borrower, has designated as ineligible to carry A.I.D.-financed goods or (ii) which has been chartered for the carriage of A.I.D.-financed goods unless such charter has been approved by A.I.D.

(c) Marine insurance on such procurement may be financed under the Loan with disbursements made pursuant to Section 7.01, provided (i) such insurance is placed at the lowest available competitive rate in Brazil or in a country included in Code 941 of the A.I.D. Geographic Code Book as in effect at the time of placement, and (ii) claims thereunder are payable in freely convertible currency. If in connection with the placement of marine insurance on shipments financed under United States legislation authorizing assistance to other nations, Brazil, by statute, decree, rule or regulation, favors any marine insurance company of any country over any marine insurance company authorized to do business in any state of the United States of America, such procurement financed under the Loan shall during the continuance of

such discrimination be insured against marine risk in the United States of America with a company or companies authorized to do a marine insurance business in any state of the United States.

- (d) Borrower and MEC shall insure, or cause to be insured, all such procurement financed under the Loan against risk incident to their transit to the point of their use in the Program. Such insurance shall be issued upon terms and conditions consistent with sound commercial practice, shall insure the full value of the goods, and shall be payable in the currency in which such goods were financed or in any freely convertible currency. Any indemnification received by Borrower or MEC under such insurance shall be used to replace or repair any material damage or any loss of the goods insured or shall be used to reimburse Borrower and MEC for the replacement or repair of such goods. Any such replacements shall have their source and origin in countries included in Code 941 of the A. S. D. Geographic Code Book as in effect at the time orders are placed or contracts are entered into for such replacements, and shall be otherwise subject to the provisions of this Agreement.
- (e) Not to exceed 90% of the cost of ocean shipping otherwise eligible for total financing hereunder may be financed under the Loan.

SECTION 6.08. Notification to Potential Suppliers. In order that all United States firms shall have the opportunity to participate in furnishing goods and services to be financed under the Loan, the Borrower shall furnish to A.I.D. such information with regard thereto, and at such time as A.I.D. may request in Implementation Letters.

SECTION 6.09. Plans and Contracts. Upon request in writing from A.I.D., Borrower and/or MEC shall furnish to A.I.D., as soon as possible, all plans and contracts and any modifications therein, for all goods and services related to the Program. Unless otherwise agreed to in writing by A.I.D. all contracts funded under this Agreement shall be approved by A.I.D. prior to their execution.

## ARTICLE VII

Disbursements

SECTION 7.01. Disbursement for United States Dollar Costs - Letters of Commitment to United States Banks. Upon satisfaction of conditions precedent, the Borrower may, from time to time request A.I.D. to issue Letters of Commitment for specified amounts to one or more United States 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, through the Use of Letters of Credit or otherwise, for Dollar Costs of goods and services procured for the Program in accordance with the terms and conditions of this Agreement. Payment by a bank to a contractor or supplier will be made by the bank upon presentation of such supporting documentation as A.I.D. may prescribe in Letters of Commitment and Implementation Letters. Banking charges incurred in connection with Letters of Commitment and Letters of Credit shall be for the account of the Borrower and may be financed under the Loan.

SECTION 7.02. Other Forms of Disbursement. Disbursement of the Loan may also be made through such other means as the Borrower and A.I.D. may agree to in writing.

SECTION 7.03. Date of Disbursement. Disbursement by A.I.D. shall be deemed to occur, in the case of disbursements pursuant to Section 7.01, on the date on which A.I.D. makes a disbursement to the Borrower, to its designee, or to a banking institution pursuant to a Letter of Commitment.

SECTION 7.04. Terminal Date for Disbursement. Except as A.I.D. may otherwise agree in writing, no Letter of Commitment, or other commitment documents which may be called for by another form of disbursement under Section 7.02, or amended thereto shall be issued in response to requests received by A.I.D. after December 31, 1977 and no disbursement shall be made against documentation received by A.I.D., or any bank described in Section 7.01 after June 30, 1978. A.I.D., at its option, may at any time or times after June 30, 1978, reduce the Loan by all or any part thereof for which documentation was not received by such date.

## ARTICLE VIII

Cancellation and Suspension

SECTION 8.01. Cancellation by the Borrower. The Borrower may, with the prior written consent of A.I.D., by written notice to A.I.D., cancel any part of the Loan: (i) which, prior to the giving of such notice, A.I.D. has not disbursed or irrevocably committed itself to disburse, or (ii) which has not then been utilized through the issuance of irrevocable Letters of Credit or through bank payments made other than under irrevocable Letter of Credit.

SECTION 8.02. Events of Default; Acceleration. If any one or more of the following events ("Events of Default") shall occur:

- (a) The Borrower shall have failed to pay when due any interest or installment of Principal required under this Agreement;
- (b) The Borrower shall have failed to comply with any other provision of this Agreement, including, but without limitation, the obligation to carry out the Program in a timely manner.
- (c) The Borrower shall have failed to pay when due any interest or any installment of Principal or other payment required under any other Loan Agreement, any Guaranty Agreement, or any agreement between the Borrower or any of its agencies and A.I.D., or any of its

predecessor agencies: Then A.I.D. may, at its option, give to the Borrower notice that all or any part of the unrepaid Principal shall be due and payable sixty (60) days thereafter, and, unless the Event of Default is cured within such sixty (60) days:

- (i) such unrepaid Principal and any accrued interest hereunder shall be due and payable immediately; and
- (ii) the amount of any further disbursements made under then outstanding irrevocable Letters of Credit or otherwise, shall become due and payable as soon as made.

SECTION 8.03. Suspension of Disbursements. In the event that at any time:

- (a) An Event of Default has occurred;
- (b) An event occurs that A.I.D. determines to be an extraordinary situation that makes it improbable either than the purpose of the loan will be attained or that the Borrower will be able to perform its obligations under this Agreement;
- (c) Any disbursement by A.I.D. would be in violation of the legislation governing A.I.D.;
- (d) The Borrower shall have failed to pay when due any interest or any installment of Principal or any other payment required under any other loan agreement, any

guaranty agreement, or any other agreement between the Borrower and the Government of the United States or any of its agencies;

- (e) Satisfactory progress is not being made in carrying out all or part of the Program according to the terms of this Agreement;

Then A.I.D. may at its option:

- (i) suspend or cancel outstanding commitment documents to the extent that they have not been utilized through issuance or irrevocable Letters of Credit or through bank payments made other than under irrevocable Letters of Credit, in which event A.I.D. shall give notice to the Borrower promptly thereafter;
- (ii) decline to make disbursements other than under outstanding commitment documents;
- (iii) decline to issue additional commitment documents; and
- (iv) at A.I.D.'s expense, direct that title to goods financed under the Loan shall be transferred to A.I.D. if the goods are from a source outside Brazil, are in a deliverable state, and have not been off-loaded in ports of entry of Brazil. Any disbursement made or to be made under the Loan with respect to such transferred goods shall be deducted from the Principal.

SECTION 8.04. Cancellation by A.I.D. Following any suspension of disbursements pursuant to Section 8.03, if the cause or causes for such suspension of disbursements shall not have been eliminated or corrected within sixty (60) days from the date of such suspension, A.I.D. may, at its option, at any time or times thereafter, cancel all or any part of the Loan that is not then either disbursed or which it has irrevocably committed itself to disburse.

SECTION 8.05. Continued Effectiveness of Agreement. Notwithstanding any cancellation, suspension of disbursement, or acceleration of repayment, the provisions of this Agreement shall continue in full force and effect until the payment in full of all Principal and any accrued interest hereunder.

SECTION 8.06. Refunds.

- (a) In the case of any disbursement not supported by valid documentation in accordance with the terms of this Agreement, or of any disbursement not made or used in accordance with the terms of this Agreement, A.I.D. notwithstanding the availability or exercise of any of the other remedies provided for under this Agreement, may require the Borrower to refund such amount in United States dollars to A.I.D. within thirty days after receipt of a request therefor. Such amount shall be made available first for the cost of goods and services procured

for the Program hereunder, to the extent justified; the remainder, if any, shall be applied to the installments of Principal in the inverse order of their maturity and the amount of the Loan shall be reduced by the amount of such remainder. Notwithstanding any other provision in this Agreement, A.I.D.'s right to require a refund with respect to any disbursement under the Loan shall continue for five years following the date of such disbursement.

- (b) In the event that A.I.D. receives a refund from any contractor, supplier, or banking institution, or from any other third party connected with the Loan, with respect to goods or services financed under the Loan, and such refund relates to an unreasonable price for goods or services, or to goods that did not conform to specifications, or to services that were inadequate, A.I.D. shall first make such refund available for the cost of goods and services procured for the Program hereunder, to the extent justified, the remainder to be applied to the installments of Principal in the inverse order of their maturity and the amount of the Loan shall be reduced by the amount of such remainder.

SECTION 8.07. Expenses of Collection. All reasonable costs incurred by A.I.D., other than salaries of its staff, in connection with the collection of any refund or in connection with amounts due

A.I.D. by reason of the occurrence of any of the events specified in Section 8.02 may be charged to the Borrower and reimbursed to A.I.D. in such manner as A.I.D. may specify.

SECTION 8.03. Nonwaiver of Remedies. No delay in exercising or omission to exercise any right, power, or remedy accruing to A.I.D. under this Agreement shall be construed as a waiver of any of such rights, powers, or remedies.

## ARTICLE IV

Miscellaneous

SECTION 9.01. Communications. Any notice, request, document, or other communication given, made or sent by the Borrower or A.I.D. pursuant to this Agreement shall be in writing or by telegram, cable, or radiogram and shall be deemed to have been duly given, made, or sent to the party to which it is addressed when it shall be delivered to such party by hand or by mail, telegram, cable or radiogram at the following address:

## TO BORROWER:

## Mail Address:

Ministério de Educação e Cultura  
Esplanada dos Ministérios, Bloco H  
Brasília, D.F.

## Cable Address:

MOC  
Esplanada dos Ministérios, Bloco H  
Brasília, D.F.

## TO A.I.D.:

## Mail Address:

Loan Coordinator, Higher Agricultural  
Education - U.I. Agency for International  
Development  
Edifício Bandeirantes - SCS Quadra 17,  
Lotes 2/5  
Brasília, D.F.

## Cable Address:

USAID/PRO  
EMBASSY - Brasília

Other addresses may be substituted for the above upon the giving of notice. All notices, requests, communications, and documents submitted to A.I.D. hereunder shall be in English, except as A.I.D. may otherwise agree in writing.

SECTION 9.02. Representatives. For all purposes relative to this Agreement, the Borrower will be represented by the individual holding or acting in the office of the Minister of Education and Culture and A.I.D. will be represented by the individuals holding or acting in the office of the Director, or his Deputy. Such individuals shall have the authority to designate additional representatives by written notice. In the event of any replacement or other designation of a representative hereunder, Borrower shall submit a statement of the representative's name and specimen signature in form and substance satisfactory to A.I.D. Until receipt by A.I.D. of written notice of revocation of the authority of any of the duly authorized representatives of the Borrower designated pursuant to this Section, it may accept the signature of any such representative or representatives on any instrument as conclusive evidence that any action effected by such instrument is duly authorized.

SECTION 9.03. Implementation Letters. A.I.D. shall from time to time issue Implementation Letters that will prescribe the procedures applicable hereunder in connection with the implementation of this Agreement.

SECTION 9.04. Promissory Notes. At such time or times as A.I.D. may request, the Borrower shall issue promissory notes or such other evidences of indebtedness with respect to the Loan, in

such form, containing such terms and supported by such legal opinions as A.I.D. may reasonably request.

SECTION 9.05. Termination Upon Full Payment. Upon payment in full of the Principal and of any accrued interest, this Agreement and all obligations of the Borrower and A.I.D. under this Loan Agreement shall terminate.

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

FEDERATIVE REPUBLIC OF BRAZIL:

UNITED STATES OF AMERICA:

BY: /S/ Delfim Netto

BY: /S/ Marvin Weissman

Title: Minister of Finance  
Ministro da Fazenda

Title: Director USAID

BY: /S/ Wilson Brandão  
Wilson Brandão

Title: Delegado Regional do MEC  
na Guanabara

BY: /S/ Raymundo Souza Dantas  
Raymundo Souza Dantas

Title: Assessor-Chefe da Coordenação  
de Relações Públicas do MEC

## PROGRAM DESCRIPTION

### A. Purpose

This PROGRAM is being established in accord with the high priority which the Government of Brazil (GOB) has given to the expansion of graduate education and in accord with the decision of the GOB to approach this expansion through focusing on individual academic areas. This requires the development of a viable mechanism to improve the planning, management, and coordination of graduate education. The PROGRAM will support the development of this mechanism using the field of agricultural education as the area for immediate development.

### B. Program Objectives

The two major objectives of this Program are:

- (1) The expansion and improvement of the graduate programs in agriculture on a selected basis as demonstrated by need. The need will be established by a demand study. The GOB, through MEC, will ensure measurement of the exact parameters of sectorial expansion and improvement required and define where and how it shall take place. In addition, the GOB will assign to certain selected graduate centers the added responsibility of offering technical assistance and staff training to selected undergraduate schools of agriculture, and in general, aiding in the development of the latter's programs.

(2) The establishment and development of a viable mechanism to improve the planning, management and coordination of graduate education in agriculture at the level of the Department of University Affairs (DAU) and at the participating universities. The major functions of the proposed mechanism are:

(a) analysis of:

- (i) the status of graduate education in agriculture;
- (ii) the demand for graduate education;
- (iii) the cost and benefits of graduate education; and
- (iv) the relationship between graduate and undergraduate education;

(b) translation of national development goals in agriculture into investment priorities, output targets, and policy recommendations for graduate education in agriculture;

(c) identification of the inputs, (including curriculum, instructional technology and resources, administrative organization, planning, management, students, etc.), the optimum mix of those inputs, and the appropriate prices to pay to get the quality and kind of inputs necessary to produce the desired outputs (graduates, research, community service, etc.);

(d) identification of the financial and human resources required to provide the inputs needed by the graduate education programs to be assisted;

3.

- (e) identification of a financial system (including the possibility of the provision of new sources of financing, such as a revolving scholarship fund for graduate study) capable of providing, on a consistent basis, the resources required;
- (f) identification of financial and technical assistance resources needed;
- (g) coordination of resource utilization throughout the system (involving potential for sharing of human and material resources among institutions and programs);
- (h) design of an improved administrative structure and coordination of the implementation system at both federal and university levels (including a clarification of roles and interrelationships of various entities with responsibility in this area);
- (i) development of a system by which university graduate programs in agricultural education provide technical assistance to other universities with weaker undergraduate programs in this area so that the latter may strengthen their courses and develop the capacity to eventually offer graduate level programs; and
- (j) development of planning, management, and evaluation tools to assist in the implementation, evaluation, and redesign of the PROGRAM as it operates for agricultural education, within DAU, and the respective universities and their graduate programs.

4.

The degree to which this objective is reached will be measured by:

- (a) the cost/effectiveness of the graduate agriculture education system in reaching its output goals; and
- (b) the mechanism's applicability to, and adoption for, planning and management of other graduate education programs in agriculture, to be determined by DAU and in other academic areas as appropriate.

Participating Institutions

(1) Central Administrative and Planning Unit

(a) Administration and Management of the Program

(i) MEC will create and maintain as a part of and subordinate to DAU a central administrative and planning unit. This unit will be headed by a coordinator and will have an administrative support staff and a professional staff covering the areas of training, finance and technical assistance in planning. The staff will be full time and of sufficient size to carry out the responsibilities of the PROGRAM. This unit will be responsible for developing the plan for overall development of graduate education, based on the results of the demand study and the recommendations of DAU which will coordinate with technical institutions involved in this area. The unit will be responsible for planning and guiding the implementation of the

types of studies needed to contribute to the constant improvement of this PROGRAM. It will be important to coordinate the action of the PROGRAM with other executing agencies which have a role in the development of graduate education in agriculture in order to maximize the effectiveness of the total investment in this sector.

(ii) The Central Unit will also develop a manual which will be used for the elaboration of development plans by the universities wishing to participate in the program. The manual will specifically:

(aa) detail the type of information required on the present operations of the graduate centers;

(bb) require a definition of what operational changes will be made; and

(cc) require information on present and projected costs, faculty loads and their definitions, facilities, administrative organization, libraries, etc.

(iii) The Central Unit will coordinate the provision of technical assistance for the preparation of the development plans. The plans will be reviewed by the Central Unit for conformance with the manual and for overall validity. After approval by the Director of DAU, the Central Unit will have overall responsibility for assisting the universities in implementing, evaluating and revising their plans.

6.

(iv) The Central Unit will serve as the contracting agent in obtaining and distributing agreed upon technical assistance. Similarly, it will process all requests for staff training and obtaining placement for approved applicants. Individual staff applications must be part of an approved university staff development plan.

(v) The Central Unit will also be responsible for evaluating each element of the PROGRAM. For this it will receive guidelines from DAU.

(b) Inputs

(i) GOB funds will be used to cover the local currency costs of personnel, supplies, and materials and travel required for administration planning, implementation, and evaluation aspects at the central level and at the level of the universities.

(ii) U.S. funds will be used to support the dollar costs of approximately 34 man years of technical assistance, 10 man years of which are expected to be used by DAU, and 24 man years are expected to be assigned to the six participating universities to assist in the improvement of university planning and administration under the direction of DAU.

(iii) Local logistical costs of such technical assistance will be covered by GOB funds.

(2) Graduate Centers at University Level

(a) Administration and Management of the Program

(i) The seven existing graduate centers (the Federal Universities of Ceará, Viçosa, Minas Gerais, Rio Grande do Sul, Santa Maria, Rural of Rio de Janeiro, and the State University of São Paulo) will participate in this PROGRAM. The PROGRAM will provide financial resources to six centers (excluding Santa Maria).

(ii) Each university will appoint a Program coordinator who will work on a full time basis and will be directly responsible to his Rector. This Coordinator will work closely with the Planning Unit of the University and will be responsible for developing university proposals for participation in the program. The Coordinator and the planning element of the university will insure the involvement of all interested parties in the planning, implementation and evaluation of the PROGRAM, as it develops in the university.

(iii) There will be a focus on improvement of existing graduate programs and, possibly, on the expansion of graduate programs. Actual decisions in this area will be based on the overall plan for the development of graduate studies based on the demand studies coordinated by DAU.

(iv) Technical assistance for the development of new graduate programs, for the improvement of existing programs and to provide assistance in planning and implementing research programs will be supplied as needed.

(v) The training of existing staff in Brazil and abroad will be included.

(vi) In addition, each university will commit itself to work with one less developed undergraduate school to help improve its agricultural education programs. The university will provide the necessary technical assistance to the undergraduate school.

(b) Inputs

(i) U.S. inputs will finance:

(aa) Approximately 56 man years of long-and short-term assistance for program development, which assistance will be assigned by the Central Unit on the basis of approved University plans.

(bb) Training abroad needed for existing staff for an estimated 30 persons through the Master's level and 20 persons through the Doctoral level;

(cc) short-term training programs in administration and planning for approximately 32 persons; and

(dd) the acquisition of teaching and library materials not available in Brazil which are needed to support the instructional and research programs in an amount not to exceed \$400,000.

Preference will be given to the purchase of innovative materials and subscriptions to journals for institutions which agree to continue the subscriptions at the end of the loan period.

The graduate centers will analyse present library holdings and operations, identify needed library resources, create training programs for learning resource center managers, develop a program for consistently obtaining needed resources, refine and expand the information systems at the universities' learning resources centers. Technical assistance will be provided as necessary.

(ii) Brazilian inputs will finance:

(aa) the training within Brazil of approximately 12 existing staff to the Ph.D. level;

(bb) the training within Brazil of approximately 30 existing staff to the Master's level;

(cc) the addition of up to 74 new staff with the M.S. Degree based on demonstrated need; including the results of the demand study, a faculty load

policy which will allocate staff time to teaching, research, administrative functions, public service, extension, and other activities.

(dd) expansion of the number of staff presently working on a full time basis in order to improve the quality and relevance of graduate courses and research; and

(ee) increased financing for supplies, materials and equipment.

(ff) local logistical support costs of foreign technicians.

(3) Undergraduate Assisted Schools

(a) Administration and Management of the Program

(i) Each of the six graduate centers will provide assistance to an undergraduate school of agriculture in another university, which school to be assisted will be selected on the basis of the following criteria:

(aa) results of the demand study for graduate agriculture education;

(bb) geographical coverage of Brazil;

(cc) commitment of the schools for change and improvement;

(dd) evaluation of their plan to receive and utilize technical assistance and staff training;

11.

- (ee) assistance and time required to reach stage of readiness to offer graduate programs; and
- (ff) additional criteria to be developed.

It is anticipated that four of these schools will be in the North and Northeast Regions.

(ii) The decision on which undergraduate schools will be assisted will be made by MEC through DAU.

(iii) The assisted school will organize itself for administering the PROGRAM in the same manner as described for the universities. It will appoint a coordinator for the PROGRAM and a school planning commission directly responsible to its Rector. The commission, together with the coordinator, the Rector and the technical assistants provided by the University will develop an overall plan for school improvement based on the planning guidelines produced by the DAU Central Unit. As the plan is completed, it will be submitted by its Rector to the DAU Central Unit. If the school development plan is approved by DAU, the resources needed to implement the plan will be provided.

(b) Inputs

(i) All assistance given to the undergraduate schools will be financed by the GOR. The Brazilian technical assistance will be provided by the graduate centers based on a contract between the two institutions approved by the Central Unit of DAU. Assistance will include:

- (aa) diagnosing the present functioning of the school;
  - (bb) creating a school development plan based on the diagnosis;
  - (cc) identifying the objectives of the school;
  - (dd) elaborating an implementation plan; and
  - (ee) carrying out the plan.
- (ii) Three levels of staff training will be provided all within Brazil;
- (aa) "Especialização" or upgrading courses for up to 160 existing staff members. The PROGRAM will attempt to develop procedures whereby "especialização" course work can be credited toward advanced degrees.
  - (bb) Master's Degree level for up to 112 staff members;
  - (cc) Ph.D. level for up to 28 existing members;
- (iii) Up to 60 additional Master's level staff will be provided to these institutions in order to improve staffing.
- (iv) Also, increased funds will be provided for needed facilities, equipment, supplies, and teaching materials.

D. Evaluation

The mechanism described as the second objective of this program requires a process of continuous evaluation and revision in order to maximize its development and implementation. Measurements will be made to the progress in attaining all of the PROGRAM objectives from the initial planning stages through completion. At each level of implementation, personnel will be assigned specific responsibility for carrying out evaluations, which will have three major emphasis:

- (1) the cost/effectiveness with which the various inputs to graduate level agricultural courses are combined to produce the desired outputs;
- (2) determination of the kinds of administration, and planning techniques which prove most effective; and
- (3) the frequency of adoption of the procedures used in the PROGRAM by other academic sectors.

E. Budget

Inputs to be financed with U.S. loan funds will be limited to dollar costs for: (1) technical assistance; (2) costs for training outside of Brazil; and (3) teaching and library materials not available in Brazil. The U.S. financial input will be used to support the PROGRAM at the Central Level and

at the graduate centers level. The GOB financial inputs will be used for all local currency requirements associated with the PROGRAM including all financial requirements for developing the undergraduate schools.

It is expected that some of the estimated expenditures will change as a result of revisions in the PROGRAM as it develops. The budget presented below represents agreed upon estimates of the required level of expenditures.

	<u>USD (000 eliminated)</u>	
	<u>U.S.</u>	<u>CCs</u>
	Contribution	Contribution
<u>I. Central Level</u>		
U.S. technical assistance (long and short-term)	\$1,552	\$ 393
GOB support costs:		
Personnel	-	542
Travel expenses	-	107
Office supplies and materials	-	133
	<u>          </u>	<u>          </u>
Total Central Level Costs	\$1,552	\$1,175
	=====	: : =====

	US\$ (000 eliminated)	
	U.S.	GOB
	Contribution	Contribution

## II. Graduate Center Level

U.S. technical assistance (long and short-term)	\$2,384	\$ 598
Training costs:		
In the U.S.	3,250	171
In Brazil	-	280
Hiring of additional faculty	-	1,539
Increase of full time assignment of faculty	-	500
Other support costs:		
Books and learning materials	400	-
Equipment	-	133
Supplies, materials and services	-	400
Total Graduate Center Level	\$6,034	\$3,627

## III. Undergraduate Level

Support costs for graduate center assistance	-	400
Additional training in Brazil	-	984
Hiring of additional faculty	-	1,242
Other support costs:		
Supplies, materials and services	-	333
Equipment and buildings	-	532
Total Undergraduate Level Costs	-	\$3,491
Total Project Costs	\$7,506	\$8,287

PDAAA-356-F1

Five Studies on the Economics  
of Education in Brasil

M. B. K. Abbott  
**FILE**  
**EJUC. 5120321 (8)**

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The studies are Moura Castro's "Investment in Education in Brazil: A Study of Two Industrial Communities", 1970; S.A. Hewlett's "Educational Investment in Brazil", June 1972; A.J. Rodgers' "Returns to Higher Education in Brazil", 1969; Frank Taylor's "Analysis of the Utilization of Resources in Industrial Technical Education at the Secondary Level in the Northeast Brazil", 1970, and S. Levy's "An Economic Analysis of Investment in Education in São Paulo", 1970. A brief comment on these studies is presented here, followed by a summary of the same.

While the studies are concerned with the economic value of education in Brazil, they are addressed to different types of education, and deal with different categories of people, at different period in time, and are based on different set of data and assumptions, thus making comparisons of results a rather difficult and risky task. In the summaries presented below the major differences are spelled out.

The studies which attempted to calculate returns to education reached results which seem to point to large gains to be expected from investment in education as compared to non-human capital investment. This is reflected in the rates of return summarized in the table attached herewith. Of course the validity of the statement depends on the yardstick used to make such a comparison, that is, the opportunity cost of capital. Castro and Levy based their studies on an 8% rate and Hewlett and Rodgers used a 12% rate. On the basis of these rates, the results obtained are quite favorable to educational investment, although Rodgers' results for higher education barely exceed the lower yardstick. Recently published studies on the opportunity cost of capital in Brazil, however, such as those by Le gonl and Bacha, suggest considerably higher rates for this cost: something in the range of 15 to 18%. In this case the social rates of return presented in the mentioned table, particularly for higher education, would be somewhat low for definitive policy recommendations for further investment on this type of education. Given the wide discrepancies between private and social rates of return, the former exceeding the latter, higher educational costs to society implicit in the rates of return would be too high, unless the expenditure data used in the studies mentioned grossly overestimate educational costs, which to some extent might be the case.

Of the studies being considered, the Rodgers' research would be of the greatest interest for the high Agricultural Education loan, since it contains estimates of rates of return for the various university curricula, including agronomy. The rates appear in table 1/ under no. 3 below. They are based on data from the 1960 demographic census, which unfortunately was not completely tabulated. Because of

USAD/B - PREP  
MARCH 1973

Returns to Education in Brazil

	<u>Social Rates of Return</u>				<u>Private Rates of Return</u>			
	<u>P</u>	<u>G</u>	<u>C</u>	<u>U</u>	<u>P</u>	<u>G</u>	<u>C</u>	<u>U</u>
Moura Castro (1968)								
Belo Horizonte	33	22	37	-	126	29	53	-
Itabirito	21	20	26	-	-	-	-	-
Hewlett (1961-1962)								
Crude Rates	10.7	17.3	17.0	14.5	11.3	22.2	20.3	33.2
Adjusted Rates (50% foregone income)	11.3	14.2	18.3	22.1	12.0	17.4	21.5	44.5
Rodgers (1960)								
Espirito Santo	-	-	-	8.2	-	-	-	25.0
North	-	-	-	9.0	-	-	-	20.7
Guanabara	-	-	-	10.4	-	-	-	16.7
Santa Catarina	-	-	-	7.5	-	-	-	21.9
Levy (São Paulo) before Tax, 1968								
Full foregone income	20.3	15.5	15.3	14.9	-	-	-	-
50% foregone income	-	17.6	17.7	16.8	-	-	-	-

USAID/EREP, March 30, 1973.

- Notes: a) the number in parenthesis following the author's name is the year the data was compiled;  
 b) except as indicated the studies cited are based on full foregone earnings in estimating educational indirect costs;  
 c) except for Rodgers' private rates all other were calculated on the basis of before tax income.

F= primary education  
 G= ginasio  
 C= colegio  
 U= universidade

this, Rogers was able to calculate rates of returns for a few areas only: the North region and the States of Espirito Santo, Guanabara and Santa Catarina. Thus important agricultural regions such as Minas Gerais, Goiás, São Paulo and Rio Grande do Sul were excluded from the analysis. This sole fact makes policy implications regarding agricultural education planning particularly hazardous, if not impossible. Sticking, however, to the areas analyzed, Rogers' results suggest an orientation for allocating resources to higher education in Brazil strongly in opposition to common sense regarding this problem in Brazil. Social investment in education, at least in the areas examined, ought to be concentrated in Law and Economics and these are the fields yielding the highest social returns. This is particularly true in Sta. Catarina and in E. Santo and Engineering appears with rates as high as Law or Economics in the North region and Guanabara. As to Agronomy, this profession showed one of the lowest rates of return. Excluding the zero rate curricula, Agronomy was the fifth lowest in E. Santo and Guanabara, the lowest in the North region and the fourth lowest in Sta. Catarina.

The discrepancy between the liberal and the technical professions may be considered mainly due to the high cost of technical education in Brazil and to distortions in the labor markets, contrary to what is usually assumed in regard to these markets, namely, that they are competitive and pay labor the value of its marginal product. Liberal professionals in Brazil, particularly lawyers, have traditionally been largely able to administer their prices, thus receiving in excess of their marginal contribution to total product. The issue is a quite difficult one and certainly cannot be attempted to be resolved here. However, in regard to inferences for the proposed higher agricultural education loan, it seems that the material contained in the studies surveyed do not allow such firm conclusions without further research. As they stand the results do not favor further investment in agrarian sciences.

1. Claudio de Moxra Castro, "Investment in Education in Brazil: A Study of Two Industrial Communities", (Ph.D. diss., Vanderbilt University, 1970).

In this research the economic returns to education in two industrial towns in Brazil are analyzed. The industrial communities are Belo Horizonte and Itabirito, located in Minas Gerais, where the author has lived for some time.

In this study almost all of the data was generated specifically for this piece of research. The data on costs came directly from the accounting and register books of two elementary schools in Itabirito, and one in Belo Horizonte. The cost figures were further refined with the help of unpublished census data. All the statistics on income, education, age and other personal characteristics were collected by means of two sample surveys. A small survey was initially undertaken in Belo Horizonte with the main purpose of testing the methodology and the questionnaire. A larger and more thorough survey was then run in Itabirito.

Rates of return were computed for elementary and secondary education using a number of alternative cost formulations, (e.g., with and without capital costs, with different assumptions regarding the length of schooling etc.) and the results were as follows:

Belo Horizonte. The social rates of return to primary education range from 31-42%. The basic rate (with capital costs and assuming a four year course) is 38%. The private rate of return is 12% (assuming no costs).

The social rates of return to ginasio range from 14-25%. The basic rate (assuming that foregone income is counted from the 2nd year, with capital costs and taking the time-span to be 4 years) is 22%. When the only costs assumed are personal foregone income the private rate of return is 29%.

The social rate of return to technical education range from 37-43%. The private rate of return (assuming foregone income to be the only cost) is 3%.

Itabirito. The social rates of return to primary school range from 1-47%. The basic rate (with capital costs and assuming a five year course) is 21%. If the student completes the elementary course in 4 years the rate goes up to 25%. These rates are considerably lower than for Belo Horizonte but the sample size is much larger.

The social rates of return to ginasio range from 12-22%, the former being the rate of return when foregone income is taken into account. The figure of 22% assumes no foregone income and a 4 year course.

The social rate of return to colegio range from 26-107%. If a student attends night school and there is no income foregone the rate is 107%. If all income is foregone the return is 26%.

2. S.A. Howlett, "Educational Investment in Brazil" (Th.D dissertation, London Univ., June, 1972).

The aim of the study is to demonstrate the economic worth of education to the Brazilian society. The author calculates private and social rate of returns to various levels of education in urban Brazil for the period 1961-63, namely, primary education, *ginasio*, first cycle, *ginasio*, second cycle and college (university). The crude rates of return were adjusted for such factors as the secular growth of income, the high drop-out and repetition rates at the primary level of education, the fact that university students are usually able to earn an income in either part-time or full time employment and for the influence of inter-correlated variables such as inherited intelligence, family background and community environment. As a standard of comparison for private educational investment the author adopted 6% as a reasonable risk-free return on private capital and 12% for the alternative rate of return for society. This rate was estimated by Carlos Langoni as the typical return from public investment in manufacturing, and also as the average that the government expects to realize from all sectors.

The study was carried out on the basis of estimates for direct cost of various levels of education made by the author and other people. The indirect costs of education or foregone earnings, were estimated by the author for students over the age of 14 taking the earnings of those people already in the work force with just an inferior level of education. Data on earnings are from the 1961-62 Getulio Vargas Foundation Family Budget Survey, covering the capitals and cities of the interior in 9 Brazilian states (5 in the Center-South, 3 in the Northeast and 1 in the North), covering some 70% of the Brazilian population.

Results. Tables 1, 2, and 3 summarize the various rates of return. In the first instance, both crude and adjusted rates of return are impressively high.

Both the crude and the adjusted social rates of return compete very well with other types of investment (this is assuming that 12% is the opportunity costs of social capital in the Brazilian economy). Only investment in primary education falls below the chosen yardstick, and that only slightly.

Ideally, an extra value should be attached to primary education because it constitutes a necessary preliminary for the other levels. However, it would be difficult to advocate more primary education "now" by using this particular argument: at the present time in Brazil, there appears to be a pool of primary school graduates who are unable to attend secondary school because of various financial and institutional reasons.

The adjusted returns clearly show that the levels of education become progressively more worthwhile from the economic standpoint. That is to say, there are increasing returns to scale at the intensive rather than at the extensive margin.

The fact that returns to the higher levels of education are impressively high indicates that at these levels demand exceeds supply. This may well imply that the Brazilian economy needs a relatively sophisticated labor-force, one which has received, at least, the benefits of secondary school education.

As to private rates of return, both the crude and the adjusted returns compete extremely well with other types of private investment. If we take 7% as constituting a reasonable return on risk free investment, the rate of return to all levels of education is well above this figure and the rate of return to university schooling is six times this figure.

Again, there are increasing returns to scale at the intensive margins, i.e., each incremental year is more valuable in the economic sense, from the point of view of the individual. Private rates of return are considerably higher than social rates and this is particularly pronounced at the university level.

Conclusions: This type of analysis facilitates educational planning on the levels of generality. Firstly, relative rates of return indicate that Brazil is not spending enough on education vis a vis other sectors of the economy. Secondly, discrepancies between the returns on different types of education, and between the private and social rates, indicate that within the educational sector, investment is not distributed in the optimal fashion.

Table 1Social Rates of Return on Investment  
in Education, Urban Brazil, 1961-65

Level of education	Crude rate of return	Adjustments			
		alpha coefficient	wastage	indirect cost	growth
Primary	10.7	8.6 ( = 0.65)	8.3	8.3	11.3
Ginasio	17.3	11.2 ( = 0.50)	11.2	11.2	14.2
Colegio	17.0	15.3 ( = 0.75)	15.3	15.3	18.3
University	14.5	13.0 ( = 0.75)	13.0	22.1	25.1

Table 2Private Rates of Return on Investment  
in Education, Urban Brazil, 1961-65

Level of education	Crude rate of return	Adjustments			
		alpha coefficient	wastage	indirect cost	growth
Primary	11.3	9.0 ( = 0.65)	9.0	9.0	12.0
Ginasio	22.2	14.4 ( = 0.50)	14.4	14.4	17.4
Colegio	20.5	18.4 ( = 0.75)	18.4	18.4	21.4
University	33.2	30.8 ( = 0.75)	30.8	41.5	33.5

Table 3Rates of Return, Summary Table

Level of education	Social rates		Private Rates	
	Crude	Adjusted	Crude	Adjusted
Primary	10.7	11.3	11.3	12.0
Ginapio	17.3	14.2	22.2	14.4
Colegio	17.0	18.3	20.5	21.5
University	14.5	22.1	33.2	44.5

3. A.J. Rogers, "Professional Incomes and Returns to Higher Education in Brazil," (Ph.D. diss., Michigan State University, 1966).

The main objectives of this study are to measure the intensity of market forces for the products of higher education and to determine the relative rates of return resulting from specialization in various curricula. Rates of return are expressed as percentages of total investment in education. Important by-products are also obtained, including, approximation of expected life-time earnings for university graduates; the relationship between income differences and twelve classes of variables such as religion, race, environment, and family composition; and comparative cost data for several university curricula. (Philosophy, Medicine, Pharmacy, Dentistry, Engineering, Law, Agronomy, Econ./Pol. Science and others.)

The main source of data is the 1960 Brazilian census sample containing 25% of all households enumerated. Persons who had completed secondary school training or any higher educational level are included in the sample.

Calculations of lifetime income flows are made for the graduates of the several curricula. Taking into account the costs of education, net income flows are converted into rates of return on educational investment. These are then compared between states and professions. *the areas are: NORTH, E-Santa, Guanabara, and S. Catarina.*

Results. Tables 1 and 2 summarize the various rates of return. With notable exceptions, university education generally returns to the individual a rate in excess of the market rate of interest on non-human capital (estimated by Roger's to be twelve per cent at the time of the Census). If educational capital costs are ignored, the social rate is equal to or slightly above the non-human capital rate of return. With the inclusion of Roger's estimate of capital costs, the social rate drops well below the non-human rate in most cases. The results are summarized below.

Rates of return to investment in the curriculum of Philosophy are negative in the North Region and Santa Catarina. In Espirito Santo the private rate of 23.90% ranks sixth out of the nine curricula studied. The social rate without capital costs of 15.58% ranks fifth, and the social rate with estimated capital costs of 5.19% ranks sixth. In Guanabara, the private rate of only 7.23% ranks eighth in the state, while the two social rates of 6.50 and 4.02% both rank seventh. The relatively high rates of return in Espirito Santo are almost exclusively the result of the high earnings of this University group relative to their secondary counterparts in the early earning years. The private rates of return to Medicine are relatively high in all areas except in Guanabara. Of the nine curricula studied it ranks fourth (25.26%) in Espirito Santo, third (21.41%) in North Region, sixth (13.21%) in Guanabara, and second (27.16%) in Santa Catarina. Both social rates of return, with and without capital costs, ranks among the highest (6.73% and 13.98%) in Santa Catarina and lowest in Espirito Santo (4.35 and 10.85%).

In Espírito Santo and Guanabara, Pharmacy yields the lowest private rates of return among all curricula studied. In Espírito Santo and Santa Catarina, it was higher only than Philosophy.

In dentistry, the private rate of return ranks sixth out of the none curricula studied in the North Region, seventh in Guanabara and Santa Catarina and eighth in Espírito Santo. Calculations of social costs, with and without capital, change the ranking only in Guanabara, (from seventh to eighth).

The rates of return to investment in engineering are among the highest found in this study. Private rates of return range from 22.70% in Guanabara to 28.06% in Espírito Santo. Within the areas these returns rank highest in Guanabara, second in the North Region, third in Espírito Santo and fourth in Santa Catarina. Social returns including capital costs range from 8.14% to 14.27. The ranking of social returns with Santa Catarina, third; and the North Region fourth.

Private rates of return to Law rank in the middle of the educational specialties studied: fourth in the North Region and Guanabara; fifth in Santa Catarina and Espírito Santo. Social rates with capital costs, however, rank much higher: first in the North Region and Santa Catarina; second in Espírito Santo; and third in Guanabara. With the exclusion of capital costs, the social rate of return is greater than the private rate for Guanabara (16.75 versus 15.90%).

Interviews indicate several reasons for the high early earnings of Law students. The most important being that a much higher portion of the activities engaged in by these students is considered by them to be related to their primary occupation and training, and hence, would be reported. It is interesting to note the relatively broad distribution of lawyers among the several classes with higher levels of income in all categories compared to liberal professions. This seems to indicate that the Law curriculum does prepare graduates for productive work outside the narrow field of Law.

In the case of Agronomy, the rates of return show extreme variance between regions, both in their ranking within the region and their absolute values. Private rates and internal ranking of these rates are: Santa Catarina, first; Espírito Santo, second; Guanabara, fifth; and North Region, seventh.

Without allowance for capital costs, the annual cost per student of Agronomy is the highest of those studied. Addition of capital costs change its rank to second (after Medicine). These relatively high costs contribute to a substantially lower ranking of social rates within the several areas: fourth in Espírito Santo, fifth in Santa Catarina, sixth in Guanabara, and seventh in the North Region.

It is difficult to define or measure "modern" as opposed to traditional agriculture in an aggregate sense for any given area or region. Nevertheless, there is little doubt that Santa Catarina and Espirito Santo would rank higher in "modern" production than the North Region.

Private rates of return to investment in Economic Sciences rank comparatively high in Espirito Santo (first) and in Guanabara (second) and relatively low in the North Region (fifth) and in Santa Catarina (sixth). Social rates with capital rank internally as: Guanabara and Espirito Santo, first; Santa Catarina, second; and the North Region, third.

Interviews indicate that the market for graduate economists in Brazil was just beginning to develop in 1960, and the high earnings of the younger graduates reflects this development. Since 1960, demand for this specialty has increased considerably which means a high probability of greater expected earnings in older age groups than is exhibited by the 1960 cross-section profiles. The per-student cost of this curriculum is second lowest amongst those studied. As with Law the general business training received in this course results in flexibility in performing various classes of productive work.

The composition of "other courses" varies from region to region, but in all cases a substantial proportion consists of graduates of military schools at the university level. Private rates of return to these "other courses" rank relatively high in the several regions: Guanabara and Santa Catarina, third; in the North Region, first; and Espirito Santo, seventh. Social rates rank second in the North Region, fourth in Guanabara and Santa Catarina and fifth in Espirito Santo. It is possible that this may be the result of a general training making possible a wide range of job opportunities.

All of the sub-samples described were aggregated into a sample of all university graduates for each region studied. Private rates of return and social rates of return with capital for each region are as follows: Espirito Santo, 24.95 and 8.22% respectively; Santa Catarina, 21.88 and 7.52%; the North Region, 20.73 and 10.23%; and Guanabara, 16.74 and 10.23%.

Although comparison of the results between major curricula is useful for planning purposes it should be noted that some of the intercurricular rate of return differentials presented in Table 1 are too small to permit meaningful evaluation. The intercurricular results are summarized below.

University graduates in Law produces the highest social rates of return of all curricula studied. Including capital costs, the rates range from 13.8 to 17.4% - generally higher than the non-human capital interest rate. Private rates of return are also quite substantial ranging from 15.9 to 24.9%. The same rate of return patterns exist for graduates in Economic sciences. This curriculum is also comparatively very low in social costs per student.

Medicine is the curriculum with the highest cost per student of any of the disciplines studied. Compared with Law and Engineering, the social rates of return to medicine curriculum is the lowest. On the other hand, private rates of return are among the highest encountered. The private rate of return to engineers is *consistently* high, ranging from 22.7 to 26.1%.

Both private and social rates of return for graduates of Philosophy are among the lowest calculated in Roger's study. The cost per student in this curriculum is comparatively low (only Law is lower) and the earnings pattern of the early earnings years, important to high rates of return, is not unusually low.

The immediate usefulness in planning of the results for other curricula is limited. For example, the large industrial-agricultural areas of Rio Grande do Sul, São Paulo and Minas Gerais should be included before returns to agronomists are used in policy formation.

Policy Implications. Law and Economic Sciences produce significantly larger social and private returns than those received from non-human capital investment. Small divergences between private and social returns, plus inoperative costs per student in these curricula suggest additional investment might be in order.

Medicine and Engineering show high divergences between social and private rates of return. These divergences plus comparatively high costs per student indicate a need to examine the efficiency with which current levels of investment are being utilized.

Table 1

The Social and Private Rates of Return to  
the Main Courses of Higher Education in  
1960 - Broken down by Regions.

Region	Courses	Social Rate of Return (w/capital costs)	Social Rate of Return (w/o capital costs)	Private Rate of Return
Espírito Santo	All Univ. Grades	8.22	14.88	24.95
	Philosophy	5.19	15.58	23.90
	Medicine	4.35	10.85	25.26
	Pharmacy	0	0	0
	Dentistry	3.65	9.04	16.27
	Engineering	8.27	16.70	21.06
	Law	17.33	21.96	24.88
	Agronomy	7.57	16.14	35.85
	Econ./Pol. Sciences	31.22	35.59	45.07
	Others	6.54	11.89	20.44
North Region	All Univ. Grades	9.03	15.03	20.73
	Philosophy	0	0	0
	Medicine	5.64	11.87	21.47
	Pharmacy	0	3.36	11.66
	Dentistry	3.64	8.41	15.43
	Engineering	10.53	17.30	24.12
	Law	14.73	17.39	18.03
	Agronomy	1.73	5.16	11.76
	Econ./Pol. Sciences	10.33	16.13	16.45
	Others	14.26	21.45	25.22
Guanabara	All Univ. Grades	10.23	14.03	16.74
	Philosophy	4.02	6.50	7.23
	Medicine	5.03	8.96	13.21
	Pharmacy	0	0	2.75
	Dentistry	1.83	4.94	7.68
	Engineering	14.27	19.92	22.70
	Law	13.83	16.75	15.90
	Agronomy	4.89	8.70	15.18
	Econ./Pol. Sciences	16.83	18.86	20.32
	Others	12.08	16.36	19.38
Santa Catarina	All Univ. Grades	7.92	13.70	21.88
	Philosophy	0	0	0
	Medicine	6.73	13.98	27.16
	Pharmacy	1.00	4.40	11.51
	Dentistry	4.00	8.42	14.15
	Engineering	8.14	15.23	24.41
	Law	16.38	20.37	21.93
	Agronomy	6.74	16.22	40.63
	Econ./Pol. Sciences	10.06	12.45	16.82
	Others	8.06	16.18	26.39

Table 2

Rates of Return to University Education in Brazil, 1960

	All Graduates		
	Social Rate of Return (incl. capital costs)	Social Rate of Return (excl. capital costs)	Private Rate of Return
Variation between the four regions	7.5 - 10.2%	13.7 - 15.0%	16.7 - 24.9%

4. F.C. Taylor, "An Analysis of the Utilization of the Resources Invested in Industrial Technical Education at the Secondary Level in the Northeast of Brazil," (Ph.D. diss., Columbia University, 1970).

Industrial technical high school systems in developing countries have been particularly criticized for their high costs and low effectiveness in training the middle-level technicians so essential to industrial development and to economic growth.

The objective of this study was twofold: (1) to identify the economic costs of educating and placing middle-level technicians in industry in the Northeast of Brazil. Estimations were made with present and with "full" internal and external resource utilization of the technical high schools. (2) To show the cost implications of achieving the output of graduates forecasted by Brazil's manpower plan with a continuation of present under-utilization of resources. Internal resources utilization was measured in terms of enrolment capacity, teacher utilization, and student flow, and external utilization was measured in terms of graduate employment. "Full utilization" of resources was that defined by the standards officially set by the system for each of these measures.

The pre-pupil budgetary costs of technical education were seen to be about five times that of academic education at the same level, yet in both types of schools personnel costs were at least 80% of the total expenditures. Economic costs (including private and public indirect costs) in both the academic and industrial schools were about twice the budgetary costs. Total economic costs were very sensitive to alternative assumptions of the value of capital charge and foregone earnings, especially the latter.

It was found that the enrollment of the industrial schools was on average only 50% of their standard enrollment capacity, and that generally "full enrollment" could have been achieved by requiring instructors to teach the number of hours for which they were actually hired. Per-pupil budgetary costs, with full teacher utilization, would have fallen approximately 40%, and economic costs would have decreased approximately 35%. It was also determined that, as a result of existing student drop-out and repetition, per-graduate economic costs were generally double those possible with perfect student flow through the system.

A follow-up study of technical school graduates of 1965 and 1966, showed that only about 35% of them went into industrial employment as technicians, and that those in industry were already studying to upgrade themselves to the engineer level. Consequently, the unit costs of obtaining the desired standard of man-years of technicians in industry from the technical schools becomes astronomical, in one of the schools as much as 2,000% above the hypothetical costs with full utilization and over thirty times the per-graduate costs of academic secondary education.

5. S. Levy "An Economic Analysis of Investment in the State of São Paulo", mimeographed (Instituto de Pesquisas Economicas, São Paulo, 1970).

This study is primarily concerned with estimating the social rate of returns to various levels of education in the State of São Paulo. The study is based on age-earnings profiles derived from data from Pesquisa Nacional por Amostra de Domicílios (PNAD), a survey that has been conducted on a quarterly basis by the Instituto Brasileiro de Geografia e Estatística (IBGE) since 1967. The reliability of the PNAD information on earnings by level of education, age and sex derived from a 1/800 sample in a state so heterogeneous as São Paulo, cannot be overrated.

The data is restricted to employees and excludes employers and the self-employed, moreover, only earnings from the principle employment are taken into account. In the absence of additional information it is difficult to determine the nature, much less the magnitude of the bias in the earnings and caused by the combined effect of these exclusions. Levy comes to tentative conclusion that the PNAD data tend to underestimate the earnings of the better educated.

The cost estimates for the various levels of education, generated for this study, were based on the accounts of the State of São Paulo and capital costs imputed by the author, assuming an 8% rate for the opportunity cost of capital.

Rates of Return were estimated, first for the public sector, and then for the entire educational system. As earnings data are not differentiated by whether schooling was in private or public institutions, the purposes of this double estimation was to show the sensitivity of the rates to differences in costs. The more relevant estimates are those for the system as a whole, where the direct social cost is a weighted average of the costs in the two sectors.

Rate of return estimates under somewhat different assumptions are presented in Tables 1 and 2. Table 1 contains the estimates by complete levels of schooling, assuming that all earnings are foregone by students. Despite the fact that this probably has the effect of considerably overstating costs, rates of return are quite high for all levels and for both males and females.

The differences in direct social costs between the public sector on the one hand, and the educational system as a whole on the other, are reflected in differences between the rates of return. Such differences are significant, especially in secondary education due to the much lower costs in the private sector. Private schooling is very important at this level, and considerably affect the weighted average of costs for the system.

The fact that students do not forego all earnings while they study is emphasized in this piece of research. Long vacations and the short period of time per day actually spent at school, allow many students to have part-time or even full-time jobs. Both private and social costs are consequently reduced, probably quite considerably, and the true social rate of return are likely to be higher than those estimated in Table 1. To take account of this, rates of return were also estimated assuming that students, on the average, forego only 50% of earnings while at school.\* This then provides us with a probable upper limit for the range within which the true rates must lie. Although such an assumption is highly arbitrary given the absence of additional information on the proportion of students forego more than 50% of earnings, and the true rates probably lie closer to the upper rather than to the lower limit of the range.

Table 1

Social Rates of Return to Investment in Education  
by Completed Levels of Schooling

São Paulo, 1968

	Public Sector			Public & Private Sector		
	(1) Male	(2) Female	(3) Male and Female	(4) Male	(5) Female	(6) Male and Female
Primary	21.71	20.93	21.81	20.29	19.09	20.26
First Cycle Secondary Educ.	19.64 (19.65)	15.00	15.61 (15.84)	19.54 (19.62)	14.87	15.52 (15.74)
Second Cycle Secondary Educ.	15.82 (15.52)	18.13	16.45 (16.13)	15.64 (15.34)	17.78	15.26 (16.15)
College	10.61 (10.81)	7.25 A	11.08 (11.08)	13.97 (14.14)	7.77	14.87 (14.96)

Table 2

Social Rates of Return to Investment in Education by Completed Levels of Schooling, Assuming that 50% of Graduates are Foreign

São Paulo, 1968

	Public Sector			Public & Private Sector		
	(1) Male	(2) Female	(3) Male and Female	(4) Male	(5) Female	(6) Male and Female
First Cycle Secondary Educ.	22.75	13.21	17.71	22.52	13.01	17.57
Second Cycle Secondary Educ.	20.77	24.72	22.73	20.59	24.03	17.71
College	12.44	15.25	13.90	17.76	12.09	13.60

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BRAZIL  
INTENSIVE REVIEW REQUEST

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UNCLASSIFIED  
LA-CAEC/P-73/3

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TITLE: HIGHER AGRICULTURAL EDUCATION  
AMOUNT: \$14-16 Million  
BORROWER: MINISTRY OF EDUCATION

SETTING

Since 1964, USAID has been assisting four Brazilian agricultural universities through a grant institutional development project. Starting from an extremely poor base these universities (The Federal Universities of Ceara, Viçosa and Rio Grande do Sul and the Agricultural College of the State University of São Paulo) have made tremendous strides toward becoming recognized centers of higher education. Their faculties have established stronger philosophies and identities, improved their staff, facilities and curricula, and expanded the scope of teaching and research programs to include graduate training (to the M.S. level) in several critical areas. They have made organizational changes permitting more effective resource utilization within the universities, and have developed more effective linkages with other universities, governmental agencies, and the communities which they serve. They have also begun to reach out to lesser developed schools which look to them for leadership.

The universities have essentially completed the initial phase of the basic development of their own institutions and are embarking on the second phase of assisting in the development of the agricultural education

system as a whole and (through the post-graduate <sup>1/</sup> education) supplying the high level scientific leadership for agricultural development. The development of M.S. programs and the current limited assistance to other schools represent their first steps in this effort, and the development they are now planning will bring agricultural education in Brazil to the point of self-sufficiency.

The level of sophistication the universities have achieved will enable them to play a much greater role in managing the external technical assistance required for this second phase of development. Furthermore, the nature of this phase demands a capacity for national level planning, coordination and management which was not possible in the past due to the low level of development. This need for national guidance is now recognized by the Government of Brazil and the universities themselves, but is existent only in a nascent form.

The loan program proposed here will build on the success of past USAID grant assistance and provide that additional assistance required to complete development of the basic framework of a self-sustaining higher agricultural education system in Brazil. It will accomplish this through a methodology that will result in an infrastructure of planning and coordination at both the local and national levels that will enable the sector to continue to develop independently in response to national agricultural development demands. The project proposes innovative approaches to an

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<sup>1/</sup> In Brazilian terminology which is used throughout this paper the term "post-graduate" is equivalent to the U.S. term "graduate" and "graduate" to the U.S. term "B.S."

old concept which are new in method and uniquely broad in their practical scope. It proposes not technical assistance to individual Brazilian schools per se, but rather assistance to a Brazilian process and system for the integrated and coordinated development of agricultural education. This is a field in which U.S. expertise is preeminent, and in which U.S. bilateral assistance is clearly superior to other possible forms of external help.

1. GOAL

An adequate corps of highly trained agricultural scientists and technicians, educators and administrators required to achieve national economic and social development goals as stated in the GOB's First National Economic and Social Development Plan, 1972-74.

2. PURPOSE

A strong self-sustaining Brazilian agricultural education system that is producing the highly trained personnel at the graduate and post-graduate levels required to meet the critical needs for: (1) quantitative and qualitative increases in the capacity for applied research; (2) qualitative increases (particularly in the Northeast) in the supply of agricultural technicians at the graduate (B.S.) level to extension organizations, government agencies, farming, and agro-industry; (3) qualitative and quantitative increases in the supply of agricultural educators at the university level.

3. OUTPUTS

A. Output Objectives

1. Well-rounded inter-related centers of post-graduate education which, in collaboration with one another, are offering those post-graduate programs to the PhD level of the highest priority for the growth of agricultural research and the training of university educators, and are in a position to independently continue to develop to the point where the agricultural education system is self-sustaining.

2. A national infrastructure comprised of universities, government agencies and the private sector that is capable of systematically planning, programming and administering the continued development of agricultural education at all levels.

3. A continuing program of coordinated development assistance between the post-graduate centers and lesser developed agricultural colleges.

B. Magnitude of Outputs

Precise quantification of the outputs cannot be made prior to the review period. However, based on the results of a USAID planning effort conducted in conjunction with the major universities and government organizations, and the preliminary development plans of the four universities now receiving direct USAID assistance the following preliminary estimates of output achievement within five years of project commencement have been made.

1. Post-Graduate Programs:

Ten to twelve PhD and four to six M.S. programs (in areas not immediately requiring development to the PhD level), consonant with national agricultural development needs, functioning at seven centers of post-graduate agricultural education (the four universities currently receiving USAID grant assistance plus three other schools capable of offering post-graduate courses) in an integrated, complementary and non-duplicative framework

2. University Level Administration, Planning and Coordination:

Modern planning and management techniques introduced at the post-graduate centers to ensure:

- a. the planning, administrative and financial management capacity to adequately support post-graduate programs;
- b. the transfer of acquired administrative and planning capacity to lesser developed schools;
- c. adequate administration of applied research that is responsive to national demands, coordinated with activities to other research organizations, and effectively disseminated to the agricultural sector

3. National Level Administration Planning and Coordination:

A national level infrastructure for planning and coordinating the development of agricultural education created through the planning and implementation of the loan program by a national level

coordinating and administrative body responsible for implementing the loan program. (See Section 4A. - Programming of Inputs).

4. Assistance to Lesser Developed Schools:

Eight to ten lesser developed schools (four in the North/Northeast, which has the most urgent need for this assistance) receiving long range developmental assistance as a result of a coordinated assistance program undertaken by the Brazilian post-graduate centers, and formulated plans for continued expansion of the program to the remaining colleges in the agricultural education system.

5. Didactic Materials:

The capacity to produce teaching, research and extension materials upgraded to the point of being able to provide adequate support to post-graduate programs, and the capacity to develop and manage information dissemination systems installed at the post-graduate centers.

The number of agricultural textbooks increased through translation and adaptation of foreign texts and the publication of Brazilian texts. At least one university press with the capacity to print agricultural textbooks.

#### 4. INPUTS

##### A. Programming of Inputs

Both USAID and GOB inputs will be channeled through a central organization responsible for loan implementation. At the present time there is no governmental organization solely responsible for the development of higher agricultural education. Initial discussions with the Ministry of Education (MEC) have indicated that its Department of University Affairs (DAU) is prepared to enter into an agreement with the Brazilian Association of Higher Agricultural Education (ABEAS), whereby ABEAS would serve in this capacity.

ABEAS is a professional association of agricultural universities. With the encouragement of the Ministries of Education, Planning and Agriculture, the universities are using ABEAS as focal point for coordinating their development efforts. Currently receiving financial support from IICA (Inter-American Agricultural Sciences Institute of the OAS), ABEAS will receive future support for its function of planning and coordinating the development of agricultural education from the MEC budget.

Under the loan, ABEAS would become the Ministry of Education's agent for technical implementation of the loan program and would be guided by a High Level Commission made up of representatives from the Ministry of Education, Planning and Agriculture along

with representatives of the major universities and the private sector. As a result of initial planning activities, ABEAS has already established special commissions for planning post-graduate programs and for developing a program for assisting other schools. The Brazilian administrative staff at the central level (appointed by MEC) will be assisted by a senior U.S. advisor (i.e., a Dean of an agricultural school). Under this central coordinating body will be project teams based at the four universities currently receiving USAID grant assistance. The three other major universities and the lesser developed schools will be integrated with the project teams, which will have Brazilian and American co-directors responsible for all aspects of the program in their area.

B. Implementation Schedule

1. Post-Graduate Programs:

The High Level Commission will be responsible for the selection of post-graduate programs to be developed under the loan, basing their decision on a study of national requirements for post-graduate education to be conducted during the next six months by the ABEAS commission on post-graduate education with the assistance of the National Human Resources of the Ministry of Planning and a private consulting firm. This study will be used in determining loan inputs and will be part of the Capital Assistance Paper.

The universities where these programs will be installed will be selected on the basis of their capacities for developing the respective programs. The scheduling of loan-financed inputs required for the development of these programs will be based on the needs of the universities and will be primarily in the form of long and/or short-term consultants, cooperating professors (short-term consultants with continuing commitments), and U.S. post-doctoral fellows will form a nucleus for operational research in the various disciplines. Their research activities will be planned in conjunction with the Ministry of Agriculture's research program which is being supported by the AID Agricultural Research Loan. U.S. academic training and limited amounts of research materials will be provided.

2. University Level Administration, Planning and Coordination:

The four U.S. project co-directors will be proficient in university and/or research administration. With a national level guidance, they and their Brazilian counterparts will be responsible for a concentrated effort to improve planning, administration, coordination of research and extension programs and all aspects of university management.

Extensive use will be made of U.S. consultants such as department heads and administrators in various areas. This area of the loan program will be closely coordinated with activities of the USAID Agricultural Research Loan to the Ministry of Agriculture.

3. National Level Administration, Planning and Coordination:

Loan inputs in this area will consist of the senior consultant assisting the central coordinating body responsible for loan administration and short-term consultants as required.

4. Assistance to Lesser Developed Schools:

The program of assistance to lesser developed schools will be based on a systematized approach to "internal technical assistance" developed through a USAID FY 73 grant program with ABEAS. Individual project teams will be responsible for coordinating assistance to specific schools.

The post-graduate centers will serve as a pool of short and long-term consultants for the program and will provide post-graduate training for staff members.

5. FINANCING

A. U.S. Inputs

Based upon preliminary estimates it is tentatively proposed that loan funds be disbursed over a period of 5 years, in approximately the following proportions:

1. U.S. Scholarships	5-6 million
2. Technical Assistance	8-9 million
3. Equipment & Supplies	<u>1 million</u>
	14-16 million

This will provide academic training for up to 150 staff members in the development of post-graduate programs and short-term training for university leaders, administrators and support personnel. Long-term consultant inputs would include central and project team leadership, advisors for post-graduate programs (estimated at approximately five man-years per program), and post-doctoral fellows. The large pool of U.S. university staff members with Brazilian experience built up during the current USAID assistance program, and the increased technical competence of Brazilian schools will allow a relatively high proportion of short-term consultants in the loan program. The amount of U.S. campus backstopping required is estimated to be less than that needed for grant programs. Limited amounts of research material will be provided, with the bulk of equipment funds going into the textbooks program for increasing the capacity of university presses. During intensive review, negotiations will be held with the GOB to determine the level of GOB financing of operational and logistical costs of U.S. technicians. At this time the assumption is made that the loan will finance only dollar costs of the program.

B. Brazilian Inputs

The level of Brazilian financial inputs will be determined during the intensive review period. It is expected that they will include: (1) commitments for percentage increase in university budgets for staff increases, financing of post-graduate programs, and increased

support requirements; (2) financing of in-country graduate training; (3) operational and logistical costs for assistance to other schools; (4) physical facilities for university presses and costs of publishing textbooks; (5) in-country operational and logistical costs for U.S. personnel.

## 6. ISSUES

This proposal represents a new approach to the development of agricultural education. It requires the assumption of increased responsibilities by the Ministry of Education and the universities, including substantial increases in GOB financial input to agricultural education. As a result of these and other factors there are some issues to be resolved before a loan can be negotiated. Nonetheless, this proposal has emerged from a joint USAID/Brazilian effort in determining the external technical assistance requirements for development, and the concepts are a reflection of the current thinking in several GOB agencies. Consequently, the Mission feels that the main burdens in resolving the issues, although substantive, will be procedural rather than conceptual.

### A. The Issues

The loan will require substantial GOB inputs in the form of budgetary increases, construction of facilities, in-country scholarships, operational costs of "internal technical assistance", and publication of texts. Although initial discussions have been encouraging, the amount of funding that the GOB is capable and

willing to provide is yet to be determined.

- B. Although the Director of DAU has verbally agreed to make extensive use of ABEAS in planning agricultural education development, the actual authority of ABEAS will have to be clarified.
- C. There are several governmental organizations responsible for university texts and teaching materials. The role of these organizations in the didactic materials area of the loan will have to be resolved.
- D. The Mission is aware of political problems in other countries resulting from the loan financing of expensive U.S. talent. Although the potential for problems in Brazil is considered remote, the issue must be explored.

Attachment: Letter from USAID/BR to  
AA/LA dated 7-19-72,  
w/enclosure



UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT  
AGÊNCIA NORTE-AMERICANA PARA O DESENVOLVIMENTO INTERNACIONAL

USAID/BRASÍLIA

LA-CAEC/P-73/3  
Attachment - Page 1 of 5



Ed. Bandeirantes - SCS, Q. 17, Lote 2/5 - Brasília, D. F. - Brasil Tel: 43-7356/43-7812

July 19, 1972

The Honorable Herman Kleine  
Assistant Administrator and U. S.  
Deputy Coordinator  
Bureau for Latin America  
Agency for International Development  
Washington, D. C. 20523

Dear Herman:

As you are aware, the Mission commenced early this year an intensive review of our assistance in the development of agricultural education in Brazil to determine GOB plans for the future of the sector after the termination of our current program in December of 1973.

As can be seen from the enclosed summary the joint USAID/Brazilian efforts to date, there has been considerable progress, primarily due to the full and enthusiastic support of several key governmental organizations and the universities.

As a result of these efforts we are submitting a new agricultural education program and a small grant project. I believe they present an approach which is responsive to Brazil's priorities and needs and consistent with A. I. D. strategy.

During the development of these proposals we have kept in close contact with the GOB agencies that would be involved in their implementation and the initial reaction from the higher levels of the three Ministries concerned -- Education, Agriculture and Planning -- indicates that we will have their full support in these endeavors.

As you can see from Annex 3\* of the enclosures, the report of the Brazilian Association of Higher Agricultural Education meeting was published in Portuguese and distributed to the concerned Brazilian authorities. Summaries of the April meeting were also distributed in Portuguese.

I hope this information will be useful to A. I. D. in deciding on future assistance to the agriculture education sector.

Enclosures

\*Not attached

cc: Mr. Heller, LA/DP  
Mr. Schwab, LA/BR  
Mr. Kimball, LA/DR  
Mr. Sleeper, LA/DR  
Mr. Fiester, LA/DR  
Mr. Whittle, LA/DR  
Mr. Long, IA/RUR

Sincerely,

  
William A. Ellis

IMPLICATIONS OF THE JOINT BRAZIL-U.S. AID  
AGRICULTURAL EDUCATION STUDY

In the FY 1964 Brazil Program Submission USAID/B identified as its major thrust the development of Brazilian, professional and managerial competence to plan, research and execute programs in the key problem areas of food production, general education and health service. It is felt that a stronger higher agricultural education sector is needed to achieve this objective in the agriculture sector. One key innovation which would help accelerate the expansion of the agricultural education network would be the introduction of a system through which the more advanced agriculture institutions would provide technical assistance to the lesser developed schools to help them to raise the quality of their teaching and to increase their enrollment.

A. The areas in which the Mission considers external assistance to be required are as follows:

1. Development and initial support to a system whereby the developed universities could provide assistance to the lesser developed schools, particularly in the North/Northeast.
2. Development of those PhD and M.S. programs that will meet immediate national requirements and form a base for future development.
3. Improvement of the capacities of the universities to administer and coordinate research and extension activities and effectively develop their overall institutions, including university administration, program planning, and financial management.

4. Improvement of the capacity to produce textbooks and teaching, information and research material, and the ability to manage both the production and the dissemination of information.
5. Development of an infrastructure at the national level that is capable of formulating agricultural education policy and effectively planning and coordinating the development of agricultural education.

Following consultation with Brazilian university and governmental leaders USAID prepared a proposal for a loan to the Ministry of Education to provide the external technical assistance required to continue the development of the agricultural education system to the point of self-sufficiency.

In addition to the loan proposal the Mission will propose FY 73 grant project designed to develop a system for coordinating and implementing a program of internal assistance to lesser developed schools. The schools which have received USAID assistance have already made initial efforts in this area but need assistance in developing a methodology and a systematized process. The project will establish this mechanism under the leadership of ABEAS and serve as an incentive to speed up the process. Initial full-scale implementation of the system will be effected as part of the loan program.

- B. Prior to undertaking the loan program, USAID would seek the following commitments from the Brazilian cooperating entities:
1. An agreement on the part of the universities to plan an integrated program on the national level that is responsive to the determined requirements placed on the higher agricultural education sector as a whole for the achievement of agricultural development goals.
  2. An agreement by MEC to increase financing of agricultural education in accord with requirements of the ABEAS manpower survey.
  3. An agreement on the part of major universities receiving assistance to make a concentrated and coordinated effort to transfer the capabilities they have acquired to lesser developed colleges and universities.
  4. An agreement on the part of the major universities to coordinate and integrate the development of post-graduate programs among themselves through the mechanism of ABEAS.
  5. An agreement on the part of participating universities to coordinate and integrate their research activities with governmental and private organizations.

C. Issues raised by the IGA Inspection of Agricultural University Projects in Brazil

The relevant findings of the IGA inspection were considered by the USAID task force during the course of the planning effort and the

following conclusions were drawn.

1. Transfer of Cruzeiro Contract Costs to GOB

The Loan Proposal in effect transfers all contract costs to the GOB. However, there will be cruzeiro support costs for U.S. technicians financed under the Loan. With the significantly increased financial inputs required of Brazilian institutions under the proposed loan, the Mission believes that cruzeiro operational costs of U.S. technicians should be loan financed so that cruzeiro inputs for recurring costs of Brazilian personnel and services can be maximized. The Mission will discuss the local currency issue with GOB officials during the intensive review.

2. Increased Assumption of Dollar costs by the GOB

The proposed loan would have the effect of transferring all Dollar costs to the GOB.

3. Direct U.S. University-GOB Contractual Arrangements

The proposed loan will follow the precedent of the Agricultural Research Loan in that the Ministry of Education, through its executive agent, will negotiate direct contracts with selected U.S. universities. Logistic support will be provided by the GOB directly or through the inclusion of allowances in the contracts.

4. Institutional Development Agreements

With the switch to loan financing and the methodology of the Loan Program, the IDA form of contract does not appear to be applicable.

PD-AAA-356-C1

~~DOC~~  
**FILE**

DRAFT: FCTaylor  
March 29, 1973

5120321 (10)

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GOB POLICY-MAKING IN THE FIELD OF GRADUATE EDUCATION

The search for a policy for the development of graduate education in Brazil is a recent phenomenon; <sup>and</sup> the formulation of that policy has proved to be a considerable challenge to Brazilian educators.

The traditional university in Brazil with its highly classical nature and restricted clientele survived into the early 1960's. Undergraduate education was the apex of the school system and provided, as it still does today, the training necessary to enter such valued professions as medicine and law. "Post undergraduate" level <sup>educative</sup> training has been available for many years to those few who wanted a <sup>more extensive</sup> ~~profounder~~ academic background but who typically had the financial means to continue their studies ~~at the graduate level~~ in high quality <sup>graduate</sup> programs abroad. Furthermore, there was no significant economic incentive for training at the graduate level.

Only in 1965 did the GOB attempt to define the concept of graduate education. At that time Prof. Newton Sucupira, a prominent member of the Federal Council of Education (CFE) wrote a Parecer (No. 977/65) outlining the basic conceptualization of Brazilian graduate education (for the most part adopted from the U.S. system).

Pressure mounted during the latter part of the 1960's for a modernized and more relevant university. During the decade enrollment at the undergraduate level leaped 357% (from 93,000 students <sup>in 1960</sup> to 425,000 <sup>in 1970</sup>) while graduate level enrollments grew by 100% (from 2,500 to 5,000). Highly trained and qualified teaching staff was not available to maintain standards of quality of instruction for such a mass of students. Furthermore, a booming and modernizing economy began to ~~exert pressure for~~ <sup>require</sup> the creation of institutions conducting research in the application of

science and technology to Brazilian development and the graduate training programs to produce the researchers, if not the research as well. The increase in complexity of decision-making in all sectors of the economy also called for advanced training of its managers.

In 1968 the University Reform Law (No. 5.540), which called for profound modernization and dynamization of the universities, gave the CFE the role of establishing norms for the organization and accreditation of graduate courses throughout the nation. In 1969 Sucupira in another well known Parecer (No. 77/69) of the CFE provided these norms. However, accreditation of graduate courses proceeded very slowly for two basic reasons: 1) lack of CFE staff to adequately evaluate the qualifications of the courses requesting accreditation and 2) a desire to maintain strict control of the accreditation process in order to guarantee quality standards in those courses accredited. (Through March 16, 1973, 50 courses in 15 institutions of higher education have been accredited by the CFE.)

Enrollment at the graduate level jumped from 4,995 in 1970 to 8,125 in 1971. In 1965 there were 65 M.A. and 23 Ph.D. courses in existence; by 1972 there were 361 M.A. and 131 Ph.D. courses operating. (It is interesting to note that in 1972 the State of São Paulo alone had <sup>121</sup>42% of the M.A. and <sup>74</sup>59% of the Ph.D. courses in the country and that the North and Northeast only had a total of 20 M.A. courses.) This recent rapid growth is probably due largely to a Decree passed in early 1969 which gave an important stimulus to the demand for graduate education. Decree No. 465 stipulated that preference would be given in the selection of assistant professors at the university level to those candidates having a Masters Degree and that, in no more than six years from the date of the Decree, that a candidate for that position must have the M.A. from an accredited

course. Likewise, preference in the selection of candidates for the position of Associate Professor would be given to those with a Ph.D. Degree and a time would be stipulated subsequently by which all candidates must possess that Degree. Furthermore, any Assistant Professor acquiring a Ph.D. Degree would automatically be qualified to be an Associate Professor and would earn the salary of that level, even if a position were not open at the time. This legislation has caused strong pressures from the teaching staff within the universities for the provision of graduate degree programs.

In order to systematically promote the implantation of graduate courses in Brazil and to prevent wasteful duplication of programs and resources, Decree No. 63.343 (of 1968) provided for the creation of Regional Graduate centers with the following objectives: 1) to train university professors to meet the needs of expansion and quality improvement of the higher education system; 2) to stimulate the development of scientific research by adequate preparation of researchers; 3) to provide the training of high level manpower required by national development; and 4) to create favorable conditions for scientific work in order to stimulate Brazilian scientists to stay in, or return to, Brazil.

CAPES (Coordenação do Aperfeiçoamento de Pessoal de Nível Superior) and the CNPq (Conselho Nacional de Pesquisas) were given the responsibility to take the steps necessary to create the centers; the CNPq was asked to survey the institutions having a capacity to offer graduate courses; and CAPES, CNPq, and FUNTEC (Fundo de Desenvolvimento Técnico-Científico of the Banco Nacional do Desenvolvimento Econômico) were specified as the principal financial <sup>agenc.</sup> sources to support the centers. Only those graduate courses accredited by the CFE were to receive financing from government entities, a provision that was liberalized by Decree

No. 65.310 (of October, 1969), which allowed financing of courses if they promised to request accreditation from the CFE within a period of 12 months. (In practice FUNTEC and CNPq have financed only those courses recognized by the CNPq as centers of excellence and CAPES and MEC's Department of University Affairs (DAU) have financed on a priority basis those courses either accredited by the CFE or recognized by the CNPq.)

The only major actions taken as a result of Decree No. 63.343 were the following: 1) the selection by CNPq of centers of excellence (120 to date) capable of developing graduate courses; 2) the gradual accreditation by the CFE of selected graduate courses; 3) a Decree (No. 64.085 in early 1969) providing for an Executive Commission for the Implantation of Regional Graduate Centers but not defining its role very well; and 4) ~~the provision~~ of financial resources ~~were provided~~ to individual graduate courses by the CNPq, CAPES, and FUNTEC.

In 1970 new impetus was given to graduate education and the idea of creating regional centers. <sup>CNPq</sup> In that year MEC <sup>presented</sup> produced a Sector Plan for 1970/73 with 21 priority projects, one of which was the implantation of graduate courses and regional centers. The major goal of the project was the upgrading of higher education staff, ~~which has continued to be the priority of MEC's program for expanding graduate education.~~ Training high The executing agencies designated for the project were the CNPq, CAPES, FUNTEC, FNDE (Fundo Nacional para o Desenvolvimento da Educação), the universities, and the CFE. Coordination of the project was assigned to CAPES and the Commission named in Decree No. 64.085.

In June, 1970 CAPES was reformulated (by Decree No. 66.662) and made into an autonomous entity of MEC. Its major duties were identified as follows: 1) to coordinate the upgrading activities for higher education personnel; 2) to collaborate in the implantation and development

-5-

of the graduate centers and courses; 3) to grant scholarships for graduate study in Brazil and abroad; 4) to promote or support meetings whose objective is the improvement of higher education; and 5) to promote or carry out studies, research, and surveys of the regional or national requirements for the upgrading of higher education personnel.

Decree No. 67.348 of October 6, 1970 created the "Intensive Program of Graduate Education", basically a scholarship program funded by the Fundo Nacional de Desenvolvimento Científico e Tecnológico (FNDCT) of the Ministry of Planning and General Coordination (MINIPLAN) and executed by CAPES and CNPq with concentration in the following areas: 1) technology; 2) health; 3) public and business administration; 4) economics; and 5) agriculture. On the same date another Decree (No. 67.350) further specified the role of the regional graduate centers. The centers were defined as the set of graduate courses (public and private), accredited by the CFE, functioning "in a coordinated and organic manner", and corresponding to a specific region of the country. The role of the centers was to promote the "systematic implantation of graduate education, avoiding the waste of human and material resources". Each center was to have a coordinating commission made up of a representative of each university or institution having graduate courses that make up the center as well as a coordinator designated by the Director of MEC/DAU. Five regional centers were initially to be created and to be headquartered in one of the major universities in each region. Provision was also made for a National Commission of the Regional Graduate Centers to serve as an advisory body to MEC/DAU. Its roles were as follows: 1) to suggest the basis for a national policy of graduate education and to submit it to the CFE; 2) to study the possibilities of implanting the regional centers, according to that

-6-

national policy; 3) to accompany the activities of the centers orienting them in the policy; 4) to propose the <sup>allocation</sup> delivery of resources to the institutions making up the regional centers; and 5) to propose the means necessary for the installation and adequate functioning of the centers. The Director of DAU was named the President of this Commission, whose members were to be one representative <sup>each</sup> of MINIPLAN, CFE, CAPES, CNPq, and FUNTEC.

The concept of the regional centers, which was proposed by Dr. Sucupira when he was the Director of DAU, met strong resistance from numerous university rectors who preferred national rather than regional decision-making on the allocation of funds to their graduate programs. It was obvious that there was a real fear that the university headquartering the regional center would influence that decision-making. Moreover, ~~some~~ Brazilian universities were unwilling to sacrifice their aspirations for graduate courses in some prestigious areas in favor order to permit some other university in the same region, judged by the center to have a greater capacity, to offer those courses.

Consequently, at the end of 1972 rigor mortis was unofficially proclaimed for the regional centers and the National Commission. That Commission did <sup>not</sup> meet several times and sponsored a national symposium on graduate education in early 1972, but it did not succeed in formulating a strategy for this area, again probably because of the lack of agreement about the appropriate mechanism to coordinate graduate education.

Nevertheless, investment in graduate education continues to grow as DAU seeks out an effective coordinating mechanism. The principal financial inputs in 1972 were as follows: 1) CNPq - US\$3.8 million; 2) FUNTEC - \$19 million; 3) CAPES - \$4.7 million (of which \$1.5 million was allocated to CAPES by DAU and \$.3 million by <sup>D</sup>FNDCT); and 4) DAU - \$8.7 million. No

data is available on the part of DAU's allocation to universities which is expended by them in their graduate programs. If this discrimination were possible, the above total for DAU would be significantly larger. Additional support for scholarships for graduate study was made available by the Ministry of Foreign Relations and the Secretaria de Cooperação Econômica e Técnica Internacional (SUBIN) of MINIPLAN. Grants for graduate level research were also made by the Fundação de Ampara à Pesquisa in São Paulo, Rio Grande do Sul, and Bahia.

Coordination of this investment is made difficult by the fact that each of the four major entities invests in the same types of projects (scholarships, teacher salary supplements, equipment, etc.) and in <sup>practically</sup> practically the same areas priorities for assistance by academic areas, and each has a very independent method of operation. However, there is evidence of recent improvements in communication and cooperation between among them. This process is facilitated by the fact that each has a "deliberative council", <sup>which</sup> ~~that~~ gives final approval on program investments, <sup>that</sup> ~~which~~ has representatives of the other entities. Typically, these entities find themselves for the most part reacting to solicitations for funds. The challenge to MEC now is to define a strategy so that these agencies in collaboration with one another can seek out and support existing programs or stimulate the creation of new ones of the type considered priority ~~for the country's development.~~ <sup>by MEC.</sup>

CAFEIS, which has the most experience in graduate education, has been exerting creative leadership recently and could well become a major focal point of coordination. It has established itself, on the basis of ~~good~~ <sup>good</sup> performance, as the clearing house for the preselection of scholarships grantees for many multilateral and bilateral entities assisting Brazil.

-8-

In 1972 CAPES initiated a rather complete study of graduate courses, their needs for improvement, and the qualifications of professors. Alarmed by the large number of drop-outs among their M.A. scholarship holders in Brazil due to regional disparities in the adequacy of preparation at the B.A. level, they are the first to invest in "levelling courses" to bring the weaker students up to the readiness stage for graduate study. Recognizing the difficulties involved in meeting the demand in the short run for graduate degree programs for all university professors who only have the B.A. degree (Minister Passarinho recently estimated this group as 90% of the total university teaching corps.), CAPES is investing in short intensive upgrading courses in subject material and teaching techniques that award credits applicable eventually toward a graduate degree. They are also interested in such possibilities as the open university and correspondence courses <sup>as alternatives</sup> for providing graduate level training for university professors. CAPES has also taken what is perhaps a very courageous stand in trying to promote the implantation of a system of reimburseable scholarships for university students at both undergraduate and graduate levels as a necessary means for financing university expansion and improvement.

CAPES has been the most outspoken in reinforcing the position of the CFE that the expansion of graduate education must not risk the same consequences as undergraduate education has obviously suffered due to uncontrolled expansion. The expansionists, if you will, justify their call for rapid growth at the graduate level on the need to meet not only the "academic" labor market<sup>1</sup> but also the "non-academic" labor market demand, the latter which is as yet not well defined. This preoccupation with the speed of expansion<sup>2</sup> is probably the most important factors

explaining the GOB priority of first trying to meet the academic demand.

along with the realization that resources will be stretched tightly just meeting the need for upgrading university professors,

Meeting the academic demand may indeed be a formidable task in light of the growth in enrollment at the undergraduate level (from 425,000 in 1970 to 800,000 in 1973!) and the corresponding need for <sup>increased numbers of</sup> qualified university professors.

This position, relevant to the issue of the demand for graduate education, is also supported by the influential leadership at the National Human Resources Center (CNRH) at MINIPLAN. CNRH takes the position that the most crucial manpower problem relative to higher education facing Brazil at this time is the poor quality of the product leaving the university (at the undergraduate level) and entering the labor market. <sup>Popular</sup> reporting of the saturation of the labor market with economists or engineers, for example, and ~~the resulting implication that the~~ <sup>therefore</sup> of the overproduction in certain areas by the universities is distorted. The demand is overwhelming in some cases but for adequately prepared graduates. Thus, there is a tremendous need to invest in graduate level education for the purpose of improving the staff <sup>and thereby the courses</sup> ~~at the~~ undergraduate level <sup>and the graduates entering the labor market.</sup>

MINIPLAN, through the CNRH, can be expected to make major contributions to the formulation of a policy for graduate education as well as to the planning mechanism for carrying out that policy. The relationship between CNRH and DAU is a good one based on CNRH's effective representation on the CFE and on their advisory capability which has frequently been solicited by DAU. Moreover, a recently initiated UNDP project in human resource development planning, ~~will provide~~ <sup>to be coordinated by</sup> CNRH, will provide 1) both international and Brazilian technical assistance to DAU in establishing an information system on higher education including thorough data on costs and financing and 2) results of educational

research and manpower analysis relevant to decision-making at DAU.

The CNRH has also played a key role in graduate education by giving critical support to a DAU initiative to experiment with a planning and coordination mechanism which could become a model for an overall policy of investment in graduate education. ABEAS, the Brazilian Association of Higher Agricultural Education, is currently receiving USAID grant assistance to 1) institutionalize a Brazilian inter-university technical assistance system among graduate level agricultural education programs and 2) establish basic orientation norms for the overall planning of higher agricultural education in Brazil. ABEAS has not only gained the respect of graduate agricultural education programs around Brazil as an effective agent to represent them and to coordinate their requests for assistance but also has become an effective arm of DAU in analyzing potential capacity and needs for development in this sector. It has technical expertise, objectivity, vision, and respect. As it has already gained the enthusiastic support of CNRH, it will surely prove effective in collaborating with, and in promoting a model of coordinated investment of, such entities as CNPq, CAPES, and FUNTEC.

All indications are that this sectoral approach, taking advantage of effective professional associations already existing, as is the case in Brazil in a number of areas strategic areas, will now gain the support of those who formerly supported a regional approach and become the model of MEC's policy for investment in graduate education.

Although MEC does not have a policy well crystallized policy at this time, USAIDD has the unique opportunity of being a catalytic agent in support of a thoroughly innovative approach to educational investment at this level.

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UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT  
AGÊNCIA NORTE-AMERICANA PARA O DESENVOLVIMENTO INTERNACIONAL



USAID/BRASÍLIA

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Ed. Bandeirantes SCS, Q. 17, Lote 2/5 - Brasília, D. F. - Brasil - Tel. 24-1555

PD-AAA-356-D1

UNCLASSIFIED

May 23, 1975

Country Director  
Office of Brazil Affairs (ARA-LA/BR)  
Washington, D.C. 20520

Gentlemen:

In accordance with A.I.D. Auditor General instructions, we are hereby transmitting a copy of our recently issued Memorandum Report of Audit No. 1-512-75-31, Examination of Brazilian University to University Agricultural Education - North/Northeast, Grant Project No. 512-11-110-094.6, and Higher Agricultural Education, Loan No. 512-L-090 (Project No. 512-21-110-321).

The report does not contain any findings or recommendations.

Sincerely yours,

*William D. Chandler*

William D. Chandler  
Chief Resident Auditor/Brazil  
Area Auditor General/Latin America

Encl.: a/s

WDC/ncl

UNCLASSIFIED

UNITED STATES GOVERNMENT

# Memorandum

TO : Mr. Marvin Weissman, Mission Director  
USAID/Brazil

FROM : *William D. Chandler*  
William D. Chandler, Chief Resident Auditor/Brazil,  
AAG/LA

SUBJECT: Memorandum Report of Audit No. 1-512-75-81, Examination of  
Brazilian University to University Agricultural Education -  
North/Northeast, Grant Project No. 512-11-110-094.6, and  
Higher Agricultural Education, Loan No. 512-L-090 (Project  
No. 512-21-110-321)

DATE: May 23, 1975

The purpose of the grant project, a forerunner of the loan, is to establish a permanent, functioning administrative mechanism for planning and implementing technical assistance in agricultural education and administration between agricultural colleges in Brazil. The loan project seeks to develop a viable mechanism to improve the planning, management, and coordination of Brazil's graduate education programs using the field of agricultural education as the area of immediate development.

Both of these projects are directed towards filling the need for sufficient well-trained manpower in agricultural research, policy, and planning, since agriculture is Brazil's most economically important sector. Although agriculture has continued to expand despite its many inefficiencies, the standard of living of the great majority of individuals directly involved in the sector remains far below par, especially in the North/Northeast. It is for these reasons that the Ministry of Education has selected agriculture as the priority discipline to receive expanded assistance and resources in the development of graduate education.

For the grant project, USAID cumulative obligations and disbursements totaled \$120,000 and \$80,000, respectively, at February 28, 1975. A deobligation of about \$30,000 is planned for the near future. The project was initiated in January 1973 and is to terminate in June 1975. The Loan Agreement for \$7.6 million was signed January 30, 1974 and has a terminal disbursement date of June 30, 1978. As of February 28, 1975, loan funds committed totaled \$1,120,000 and disbursements were \$9,953.

Ohio State University, through a contract with the Ministry, has provided technical assistance for the grant project. This assistance has been directed primarily towards the establishment of the inter-university assistance mechanism at the Ministry level. Although two long-term advisors were originally planned for, only one was made available because a suitable candidate could not be located for the other position. Nevertheless, the quality of the services provided has generally compensated for this shortfall.



In addition, two lesser developed undergraduate agricultural colleges in the North/Northeast were selected to receive technical assistance from Brazilian graduate-level sister institutions. It should be noted that much of the expertise developed by these latter institutions was acquired under previous USAID grant projects. This portion of the project is funded entirely from Brazilian resources.

The Ministry has enthusiastically adopted the idea of inter-university assistance. The desired permanent, functioning administrative mechanism has been established at the central level for planning and implementing inter-university technical assistance. Also, the assisted institutions have received fellowships, and long and short-term assistance has been provided generally in accordance with that planned. Furthermore, the project has initiated an awareness at the assisted schools of the need for advanced training and for development of a self-evaluation process.

The grant project was to provide an institutional base for a future expanded program of inter-university assistance. This expanded program is being undertaken through the loan project.

The loan has two major objectives. The first is to expand and improve graduate programs in agriculture on a selected basis as demonstrated by need. In this connection, the Ministry is to ensure measurement of the exact parameters of sectorial expansion and improvement required and define where and how it shall take place. Graduate centers were to be selected to provide technical assistance and staff training to selected agriculture undergraduate schools, and in general, aid in the development of the latter's programs.

The loan's second major objective is to establish and develop a viable mechanism to improve the planning, management and coordination of graduate education in agriculture at the Ministry level, and at the participating institutions.

Original estimated costs by program element were as follows:

(In Thousands of Dollars)

	<u>U.S. Contribution</u>	<u>Brazilian Contribution</u>
Central Level	\$1,552	\$1,175
Graduate Center Level	\$6,034	\$3,621
Undergraduate Level	-	\$3,491
<u>Total</u>	\$7,586	\$8,287
	=====	=====

The U.S. technical assistance portion is estimated at over \$3.9 million while U.S. participant training costs are about \$3.3 million, all at the graduate level. The remaining \$.4 million is for books and learning materials.

The loan project is in the early implementation stage and is behind schedule. This is primarily the result of delays by the Ministry in meeting an elaborate set of conditions precedent to loan disbursement. However, the meeting of these conditions was necessary to ensure proper program planning and implementation. Consequently, the technical assistance contract was awarded late and planned staffing of the program has been delayed. The USAID believes, however, that the present contractor and Ministry staffing is adequate at this stage since a comprehensive program plan is now being developed, in conjunction with firm staffing requirements.

Michigan State University, through a contract effective November 22, 1974 with the Ministry, is to provide the needed U.S. technical assistance. Only limited short-term assistance has been provided thus far.

On the basis of a demand study, six selected graduate centers have been paired with six selected undergraduate schools for the purpose of providing assistance and training. Two of these graduate centers and their corresponding undergraduate schools are currently participating under the grant project.

The six graduate centers are in the process of implementing their assistance plans for the current school year based on studies and guidance received from the Ministry. These criteria were, in part, determined through meeting the loan's conditions precedent.

The Ministry, in conjunction with the contractor, has initiated action to establish and develop the desired viable mechanism. Development plans for the assisting and assisted schools have been formulated and are undergoing evaluation.

Our visits to the two assisted schools involved under the grant project disclosed that there had been some misunderstanding among school officials as to program objectives, activities, and responsibilities between the participating institutions. Much of the communication and correspondence which had taken place had been done on an informal basis.

This area of deficiency was noted on the jointly-prepared grant project appraisal report covering the period from project inception through March 1974. The report recommended that tripartite agreements be utilized between assisting and assisted schools as well as with the Ministry in order to clarify understandings of responsibilities under the project. This proposed action was to have been completed by June 1974, but it has not been accomplished.

Since the grant is terminating in June 1975, little could now be gained through the use of tripartite agreements. However, this type of activity will be increased three-fold under the loan project.

Fortunately, recently adopted procedures under the loan project provide for the use of tripartite agreements so this condition has been accorded proper treatment. Under these procedures, the corresponding assisting and assisted schools prepare an annual joint operational plan for development of the latter institution. This plan is to be co-signed by both institutions and approved by the Ministry.

There was a problem involving the completion of participant training activities under the loan within the proposed time-frame because of project slippages. However, the USAID was cognizant of this problem and had under consideration several alternative plans to resolve this condition.

Our examination covered the period from each projects' inception through February 28, 1975. The primary purpose of our examination was to determine the degree of attainment of the projects' objectives, and the effectiveness of planning and implementation. Other purposes were to evaluate the effectiveness of financial and administrative management of the projects and the degree of compliance with A.I.D. policies, regulations, and procedures.

Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of project documentation and USAID financial records as were considered necessary in the circumstances and discussions with USAID, Ministry and contractor officials. Site visits were made to the two assisted schools participating under the grant project. We did not examine the U.S. dollar accounting records of the contractors since those records are located in the U.S. and are subject to audit by the Borrower and the Office of the Auditor General, AID/Washington.

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