

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

A. I. D.
Reference Center
Room 1656 NS

BRAZIL - FERTILIZER IMPORTS

512-L-028

A. I. D. HISTORICAL AND
TECHNICAL REFERENCE
ROOM 1656 NS

100-11171-258

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

AID-DLC/P-268
June 22, 1964

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Brazil - Fertilizer Imports

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed \$15,000,000 to the Government of Brazil to assist in financing the United States dollar costs of the importation of fertilizer into Brazil from the United States.

This loan proposal is scheduled for consideration by the Development Loan Staff Committee at its meeting on June 24, 1964 and a telephone poll of DLC members will be conducted to determine whether the DLC members approve without a DLC meeting or request a DLC ^M meeting for the consideration of this proposal.

Helen E. Nelson
Secretary
Development Loan Committee

Attachments:
Summary and Recommendations
Project Analysis
Annexes I-IV

FERTILIZER IMPORTS

I. SUMMARY AND RECOMMENDATIONS

- 1.01. Applicant: Government of Brazil through the Minister of Finance. The Bank of Brazil and the Minister of Agriculture will be the executing agents for the project.
- 1.02. Amount of Loan: \$15 million.
- 1.03. Total Cost of Projects: \$15 million.
- 1.04. Description of the Project: Proposed is a loan to the Government of Brazil to increase the production of certain food crops by making available U. S. fertilizer to Brazilian food producers at prices and credit terms more favorable than those presently available in Brazil. Under this proposal, Brazilian Importers will purchase A.I.D. dollars which are "tied" to the import of fertilizer; the local currency generated by the sale of the foreign exchange will be deposited in a special fund. The fund will be used as a tightly controlled source of agricultural credit to channel fertilizer into basic foodstuff production and to bring about expansion of the domestic fertilizer industry.
- 1.05. Purpose: The basic thesis of this loan is that (1) a substantial increase in foodstuff production can be brought about by an increased use of fertilizer in Brazil but, (2) that the high price of fertilizer in Brazil to the producer of such foodstuffs inhibits effective demand for such fertilizer and (3) that this high price, in turn, is in large part a reflection of the lack of adequate credit facilities both to the distributor and end user of fertilizer. It is the contention of this paper that through the mechanism of this loan approximately a 30-40% reduction in the price of fertilizer to the producer can be achieved by lowering the financing charges at two points in the transaction: (a) a 15% reduction in the cost of importing by eliminating the interest charges to the importer in obtaining this foreign exchange (4% per month for 75% the cost of the import for five months) and (b) a further reduction by selective discounting of the accounts receivable of the distributors of fertilizer who extend credit to producers of specific basic foodstuffs.

reduction by selective discounting of the accounts receivable of the distributors of fertilizer who extend credit to producers of specific basic foodstuffs.

- 1.06. Availability of Other Free World Financing: No other financing is available for this project.
- 1.07. Mission Views: Mission accords this project high priority.
- 1.08. Country Clearance: COCAP approval was given by letter dated May 25, 1964.
- 1.09. Issues: None.
- 1.10. Recommendations: Authorization of a loan to the Government of Brazil through the Minister of Finance for an amount not to exceed fifteen million dollars (\$15,000,000) with the following terms:
 - (a) The Borrower shall repay the loan to A.I.D. in United States Dollars within forty years (40) years from the first disbursement under the loan with a grace period of not to exceed ten (10) years. The Borrower shall pay to A.I.D. in United States Dollars on the disbursed balance of the loan interest of three quarters of one (3/4 of 1) percent per annum during the grace period and two (2) percent per annum thereafter.
 - (b) Other Terms and Conditions:

Designation by the Bank of Brazil and the Ministry of Agriculture of the Member of the Joint Committee to administer the loan;

Agreement by the Borrower to maintain its usual total imports of fertilizer during the period of disbursement of the loan.

Equipment, materials and services financed by the loan shall be procured from the United States of America (excepting marine insurance which under appropriate conditions may be procured from other sources).

- (c) Such other terms and conditions as A.I.D. may deem advisable.

Working Group

Project Manager: Leonard D. Brooks, ARD
Counsel : Charles E. Nelson, Legal Advisor
Araken Faissol Pinto, Legal Advisor

Drafters : Jerome I. Levinson, USAID/B
Dr. Richard R. Newberg, USAID/B
John R. Breen, LA/DP

II. PLACE OF THE LOAN IN THE PROGRAM

- 2.01. The present Government of Brazil gives every indication of wishing to cooperate with the United States wholeheartedly in the Alliance for Progress. Moreover, the new Government has taken several courageous measures, such as the ending of subsidies on wheat and petroleum, and has publicly committed itself to a stabilization-development-reform program. Further, the appointments to the cabinet and the public declarations of the president and cabinet ministers evidence a serious intent to implement this policy. Accordingly, the provision of financial assistance, on this sound development project, to the GOB or to its entities, is consistent with A.I.D. objectives and with Alliance principles--namely, the collaboration of financial assistance with responsible self-help development efforts.
- 2.02. The Minister of Planning has emphasized the necessity - both political and economic - of maintaining a steady flow of economically sound assistance in the first few months of the new administration. The Mission and Embassy concur in this judgment.
- 2.03. The tying of the proposed dollar loan to specific fertilizer imports assures that the use of the foreign exchange will be for imports essential to support and expedite the GOB's stabilization program during the next several months. In the longer run, the extent to which the special cruzeiro fund, created by the sale of loan dollars, contributes to the expansion of fertilizer output, will accelerate economic development in several direct and indirect ways.
- 2.04. High food prices not only are a current destabilizing influence, in economic, social and political terms. Moreover, expansion in output would enhance the possibilities of capital accumulation in the agricultural sector, and lay the basis for having the agricultural sector play a more positive role in overall national economic development. Thus, this project would represent a measurable contribution to advancing both the pace and stage of development in Brazil.

III. HISTORY OF THE LOAN

- 3.01. USAID/Brazil, recognizing the agricultural and over-all contribution to development which could be made by an expanded agricultural minerals industry, authorized a feasibility study to explore the possibilities of expanding Brazilian agricultural production with fertilizer, agricultural limestone and livestock minerals. The work on this study in Brazil was initiated January 1, 1964, and completed May 4, 1964. A preliminary summary report was delivered to USAID/Brazil, April 24, 1964. The report demonstrated the benefits to be derived from the increased use of fertilizer.
- 3.02. Oscar Thompson Filho, while Secretary of Agriculture in the State of Sao Paulo, initiated discussions with USAID looking to a loan of dollars for fertilizer imports to be utilized in that State. Later, on assuming the position of Minister of Agriculture, he reiterated his strong interest in a similar project to be applied on a national basis. The Ministry of Planning also has attached high priority to this project as part of the new administration's concerted efforts to tackle inflation and respond to the need for radical improvements in the agricultural sector.

IV. THE AMOUNT OF THE LOAN

- 4.01. The total supplies of fertilizers used in Brazil have been increasing steadily since 1950, but use per hectare is still very low. In a study of crop production levels and fertilizer use made by FAO, total consumption of N - P₂O₅ - K₂O, 1956-58 averaged only 8.5 kilograms for the U. S. and a high of 438.6 kilograms in the Netherlands. Annex II Exhibit 5 shows trends in apparent consumption of fertilizers in Brazil for the period 1950-1963.
- 4.02. Brazilian Government figures for 1963 show fertilizer imports for agricultural use to have been \$22 million. Of this amount only 40% is estimated to have been used for production of foodstuffs, while 60% is applied primarily to coffee and cotton crops.

- 4.03. Fertilizer use in 1963 equaled 286,000 element tons. Of this, approximately 115,000 element tons was estimated to have been used on basic foodstuffs. The proposed loan would provide 93,000 additional element tons - which over two crop years amounts to a one-third increase in the use of fertilizer on basic foodstuffs. It is estimated that present processing and distribution facilities are adequate to handle at least a one-third increase in supply. In fact, the Fertilizer Trade Association estimates these facilities to be adequate to handle the entire 93,000 additional element tons in one crop year.

V. ECONOMIC JUSTIFICATION

A. Background

- 5.01. Agricultural development in Brazil has been characterized by mining of the soil nutrients to the point that yields have been depressed and the nutritional values of foods and forages have been reduced. Although the industrial complex of metropolitan Sao Paulo has been called the most impressive of its kind in Latin America, Brazil remains predominantly an agricultural country. Approximately 39 million people or about 55 percent of the population earn their livelihood from agriculture. The agricultural sector produces approximately 30% of national income and about 85% of the foreign exchange earnings of the country. Rural incomes are very low due to low productivity. Increased use of fertilizer would help increase productivity, lower per unit production costs, and increase rural incomes.
- 5.02. In the last decade the increase in products of plant and animal origin and vegetable extracts amounts to 46.7% or less than 5% yearly. On a per capita basis, the Brazilian crops and livestock sector reached an expansion of 10.5% or around 1% yearly. Although output in the period rose somewhat more than population, it was not enough to meet the needs resulting from the demand for living standards of the Brazilian people (notably in the large urban centers) and the rapid industrialization of the country's economy.

Furthermore, the growth in this sector lagged beyond the general expansion of GNP and, in effect, constituted a retarding factor on over-all economic expansion.

- 5.03. In per capita terms, the 1963 crop and livestock sectors declined; the crop by 3.9%, the livestock by 3.4% and the vegetable extraction by 1.5% as against increases in 1962 of 1.2%, 6.1% and 1.5% respectively. The 1964 crop presently being harvested shows declines of 5%-35%, in such essential food and feed items as corn, soybeans, peanuts, rice and wheat.
- 5.04. Brazil needs to expand its domestic food supply more rapidly to meet the needs of a population which is growing rapidly for which many internal foods demands and nutritional needs remain unsatisfied. The normal situation has been further complicated this year by droughts in some parts and floods in other parts of the major food producing areas. As a result even the meager normal stocks of food are greatly diminished. Prices for vegetable oil have increased rapidly. Food lines are common for such basic foods essentials as rice, beans, meat, sugar, and milk. The situation is sufficiently serious that the U. S. has been requested and has agreed to extend PL 480 Title I sales which historically provide only wheat, to include also vegetable oil, lard, dried milk, butter, dry peas, and grain sorghum.

B. Benefits Expected

- 5.05. The impact that the use of \$15.0 million of additional fertilizer will have in terms of increased food production cannot be precisely projected due to the lack of adequate country-wide research data. Reasonable forecasts, however, can be made through the use of projections on individual crop basis.
- 5.06. A large proportion of the fertilizer used in Brazil is in the form of mixtures. The individual elements of N, P, and K are imported or manufactured and then mixed. The normal practice is to formulate a mixture with the ratio of N=1, P=2, K=1, or multiples of 1-2-1. The material

commonly used to supply these elements are ammonium sulfate (N), normal superphosphate (P) and potassium chloride (K). CIF port price, ton basis of each element is: Nitrogen (N) \$220.00, phosphate (P₂O₅) \$160.00, potassium (K₂O) \$110.00. A blend price on a 1-2-1 basis would be \$161.00 per ton, or 8c per pound of element. The \$15.0 million loan would provide some 93,000 element tons.

- 5.07. Illustrations of net returns from the use of fertilizers, based on agronomic experiment data, demonstrate the profitability of fertilizer use in Brazil. (See Annex II, Exhibit I). This information is a summarization from the recently completed USAID sponsored fertilizer use feasibility study.
- 5.08. The production increase that could result from the proper use of the above noted volume of fertilizer is pointed up by results obtained through field trials on corn conducted by IRI Research Institute in Sao Paulo state,

Fertilizer applied (element basis	- 56 pounds per acre
Cost of fertilizer	- \$4.50 per acre
Increased corn yield	- 3.140 pounds per acre
Value of increased yield (corn valued at \$1.00 cwt)	- \$31.40 per acre

The 7-1 income to cost ratio is extremely favorable.

- 5.09. It is recognized that projecting a large volume of fertilizer use by a great number of different farmers will not produce income-cost ratios as favorable as 7-1, but it is expected that an average 4-1 ratio will be attained. Projection of such a ratio results in some \$60.0 million in value of the added production in the agricultural sector.
- 5.10. Based on the normal relationship between value at the farm land and value at the ultimate point sale, we would estimate a multiplier effect of at least 2:1. Thus the total value of added product to the economy as a whole would be at least \$120 million.

- 5.11. It is expected that a major part of the net difference between the cost of the fertilizer to the farmer and the increase in value of the product will be reinvested to expand the productive capacity of agriculture, particularly to provide an intra-sector source of future fertilizer purchasing power.
- 5.12. Brazil has need to expand and diversify its agricultural export earning. Brazil has one of the world's largest acreages of sugar cane. World sugar supplies are short and prices have gone up rapidly during the past year. Instead of being able to capitalize on the growing world demand for sugar and the higher prices, Brazil finds herself in the position of not being able adequately to supply its own needs and its past export markets. Average yields of sugar per acre are extremely low in Brazil. Low use of fertilizer is the major factor in these low yields. Increased availability of fertilizer at reasonable prices would permit the sugar growers to increase yields quickly, and satisfy domestic demand.
- 5.13. The case of cocoa is similar. Production of cocoa has been declining at a rapid rate and exports have fallen off drastically in recent years. Declining soil fertility in the cocoa growing areas is a major factor.
- 5.14. For these two commodities the U. S. offers the major world market and U. S. demand is growing rapidly. This program will help to insure adequate world supplies of these two important U. S. import commodities.

C. Operation of the Loan

- 5.15. Under the existing system of credit, the importer and distributor (often the same company) are in effect financing the transaction over a period of 14 of the 16 months average between placing of an order and the collection from the farmer after he has marketed his products. as follows:

4% per mon. financing of purchase of exchange	Mixing and Processing	Crop Financing	
/ 5 mos.	/ 2 mos.	/ 9 mos. /	
Placing of order and opening of letter of credit.	Arrival of Fertilizer	Sale to end user.	End of Crop Payment.

5.16. As previously noted, it is anticipated that the price of fertilizer to the farmer on certain selected crops can be reduced by as much as 30-40% by reducing the 4% per month financing charges involved in the purchase of the exchange and by reducing the crop financing charges on credit extended to the farmer by the distributor.

1. Reducing the Interest Charge on the Purchase of Exchange

5.17. The present scheme of fertilizer imports operates as follows:

(1) The GOB is substantially in arrears in payments to both U. S. exporters of fertilizer and others. At present it is believed that the Bank of Brazil is making payments for shipments which took place in October. Thus the arrearage amounts to approximately seven months.

(2) As a consequence of this arrearage the U.S. export trade requires that a letter of credit be obtained in the U. S., before it will process an order.

(3) In order to obtain the dollars to deposit against such a letter of credit a Brazilian importer has two potential sources of foreign exchange: the bank of Brazil or a private commercial bank.

(4) If the importer buys from the Bank of Brazil he can obtain credit terms which require him to deposit only 20% of the total cost of the transaction at the time the order is placed, and the remaining 80% at the time the fertilizer arrives in Brazil.

5.18. As previously noted, however, the Bank of Brazil is still paying off arrearages to the fertilizer trade and it is therefore unable to deposit immediate dollars to open a letter of credit for shipments which will not occur for approximately five months.

5.19. Accordingly, in order to insure the opening of a letter of credit without which the U. S. exporter will not process the order, the importer is forced to buy his exchange from a private commercial bank at a charge of approximately 4% per month and sometimes more.

5.20. By making the dollars available with this loan to the Bank of Brazil, A.I.D. will obviate the necessity for the importer to obtain his financing from the private commercial bank at a 20% interest charge.

2. Credit to the Farmer

Present Distribution and Credit Facilities

5.21. The most extensive system of distribution facilities for the marketing of agricultural supplies, including agricultural minerals, exists in the State of Sao Paulo. The 39 mixing firms located there operate 41 plants and 183 warehouses in the State of Sao Paulo and another 30 warehouses in adjacent states. The companies involved maintain an organization of 162 inspectors and 2,322 salesmen and representatives to promote the use of fertilizers and to provide technical assistance to farmers. Included in the personnel of these companies are 72 trained agronomists.

5.22. In the southern states of Santa Catarina and Rio Grande do Sul there are eight major distributors of fertilizers. Most of the plants are located in the port cities of Rio Grande and Porto Alegre but the companies maintain distribution facilities in the major agricultural areas in the interior.

5.23. The distributor commonly finds it necessary to finance sales of fertilizer to farmers. This is one of the major cost items in the distribution of fertilizer. Varying somewhat with the type of crop, it is necessary for the distributor to provide credit of six to 12 months. With commercial costs of money of 50 to 60 percent per year and sometimes more, this is a major factor in the high price of fertilizer. Typically, the cost of credit is passed on to the farmer in the form of higher prices for fertilizer with discounts given for cash payments. Where he must carry the farmer for 6 to 12 months the distributor finds it necessary to raise prices by the real or the opportunity money cost to him of 30 to 60 percent for 6 to 12 months plus a credit service charge.

5.24 It is common practice for creditors to demand payment at harvest time. This forces the farmer to sell just when the markets are glutted and prices are most depressed. By the end of the year prices in the farm area often reach levels of two to four times the previous harvest time price. When markets are glutted and prices depressed, there is pressure to export commodities leaving too little for normal consumption needs. The crop of a year ago (April-May 1963) is a case in point. The price of corn fell to a very low level, and some corn was exported. Serious shortages developed in the country before the next crop harvest.

5.25. Fertilizer distributors would be able to make a substantial reduction in fertilizer prices to farmers and cooperatives if credit were available directly to farmers to provide fertilizer purchases or if a system were developed wherein fertilizer distributors would be able to rediscount fertilizer loan paper.

5.26. In discussions held with the fertilizer trade, they indicated they would give a price discount of at least 30% in prices of fertilizer to farmers and producer cooperatives if the distributors could rediscount their fertilizer loan paper.

5.27. Most fertilizer companies in Brazil provide some services to farmers in the form of technical information on fertilizers, application techniques, and in some cases in analyzing soil samples. However, some services that farmers in the United States have come to expect from fertilizer distributors, and that have helped stimulate fertilizer and limestone sales, such as delivery, bulk spreading and rental of application equipment, do not exist.

5.28. Considering that 44.7% of the farms in Brazil are less than 10 hectares in size and that 89.4% are less than 100 hectares (247 acres) in size, providing services such as delivery should help stimulate demand. Even in the United States farmers with 200-250 acres cannot afford to own large, efficient bulk application equipment. However, equipment for application commonly is made available by independent dealers and cooperatives.

5.29. The capital necessary for the investment in application and large, bulk-spreading equipment could be made available if an adequate agricultural credit program were available. A fertilizer study conducted in Sao Paulo in 1962 showed that about 43% of the total assets of fertilizer companies were tied up in accounts receivable, due to the necessity of selling to farmers on credit. If credit to farmers for buying fertilizer could be handled directly by credit agencies, or if the fertilizer companies could discount loans they make to farmers through some existing credit agency, money now tied up in accounts receivable could be used to expand production capacity and services.

3. Operation of the Discount Mechanism

Counterpart Use

5.30 The counterpart derived from the sale of the dollars would be deposited to a Special Fund in the Bank of Brazil (BOB) and would be used primarily to discount distributors accounts receivable representing fertilizer sales to producers of basic foodstuffs and selected export earners (cacao and sugar). Additionally, the fund could be used for direct loans to producer cooperatives for purchase of fertilizer and for expansion of the domestic fertilizer industry.

Timing

5.31 The counterpart would be deposited at the time the fertilizer arrives in Brazil. The fertilizer is mixed and processed, a procedure which takes approximately two months. The distributor then delivers the fertilizer to the end user receiving the latter's promissory note (or other credit instrument). Thus, under this procedure the counterpart should be available before it is needed for discounting the distributor's paper. However, in order to ensure availability of cruzeiros at the beginning of the project, USAID and GOB will allocate a sufficient sum of cruzeiros from P.L. 480 or Program loan counterpart to the Special Fund.

Administration of the Funds

5.32 The fund would be administered by a Joint Committee composed of representatives of the USAID Mission in Brazil and the Government of Brazil. The USAID will assign the chief of the ARD as its representative on the Joint Committee. The Government of Brazil will be represented by a designee of the Ministry of Agriculture, a representative of the Bank of Brazil and a representative of COCAP. A condition precedent to disbursement under the loan will be establishment of the Committee and the designation of the members. Decisions of the Joint Committee will be made by unanimous consent.

5.33 The Committee will determine the institutions through which the discounting of the distributor's paper will be accomplished.

It is anticipated that the primary institution for this purpose will be the Bank of Brazil through its CREA Division. Additionally, however, the Committee may determine to use other institutions such as the Banco de Estado do Sao Paulo or the Nacional Cooperative Bank.

5.34 The Joint Committee additionally will have responsibility for the following:

1. Determining crop eligibility for discount privilege.
2. Determining priorities for industrial expansion of the domestic fertilizer industry by type of fertilizer (evaluation of the engineering financial and economic aspects of individual loan applications will be the responsibility of the banking institutions from which a loan is sought).
3. Monitoring the use of funds, specifically arranging for spot checks to safeguard against unauthorized crop use; evaluate the ratio of A.I.D. disbursements and discount paper in accordance with Section 9.02 of this paper to determine whether there is an unauthorized crop use of fertilizer and provide for corrective measures.
4. Evaluating the total additionality factor described in Section VII of this paper.
5. Determining the interest rate for discount of distributor paper. It is expected that this rate will be within the legal lending rate of the Bank of Brazil ($1-1\frac{1}{2}\%$ per month). Further, it is expected that the paper will specifically show the quantity and type of fertilizer (chemical analysis) and the full price paid by the farmer, as well as the crop use. The Committee will arrange for spotchecks to insure that the financial benefits of the rediscount system are fully reflected in the price paid by the farmer.

F. Possible Future Loans for Fertilizer Imports

5.35 In its industrial lending program, involving the use of development loan, P.L. 480 or counterpart funds from program loan sources, the USAID Mission in Brazil will accord a high priority to the expansion of the domestic fertilizer industry. (Similarly, the Mission will accord a high priority to expansion plans of those distributors who show an approved plan for utilizing increased liquidity obtained from the discount of their accounts receivable for expansion of such facilities as applicator equipment and technical services). Such a program will not produce major increases in domestic fertilizer productions within three years. Thus, the possibility of future loans for imports of fertilizers must be recognized. The form these loans would take or whether such loans would be necessary would depend primarily on the balance of payments position of the Government of Brazil at the end of the second year, and internal economic developments during this period.

VI. IMPLEMENTATION PLAN FOR USE OF THE DOLLARS

A. Definition of Fertilizer

6.01. Fertilizers and mineral supplements as herein defined may include already prepared fertilizer to be used on crops and livestock mineral supplements or raw materials to be used solely for the manufacture or formulation of such materials. Fertilizer materials include elements of NPK and S plus trace mineral included in mixed fertilizer materials. Livestock mineral supplements shall be restricted to the element P except where trace mineral are included in already prepared supplements.

B. Estimated Schedule of Imports

6.02. The type of fertilizer material purchased will depend on the availability of the supplies. The Mission has been in contact with Brazilian importers and U.S. exporters concerning availabilities. It is understood by the Ministry and the local importers that supplies are short in Europe and U.S. and that purchases will need to be made within availabilities.

6.03. The major planting seasons are: first crop, October to December; second crop, January to March. For the first crop it will be necessary for supplies to be shipped during August to October. For the second crop shipment should be October to January. The first peak in procurement is expected as soon as funds are available. In fact the Sao Paulo Fertilizer Syndicate indicated that it was prepared to make immediate purchases upon completion of the loan agreement. This first peak should continue through November or December. There will be a low from January to March and then a new peak in procurement April to January for 1965 crop plantings.

6.04. Since the private trade will do the importing the Mission cannot give exact data on tonnage or types of fertilizer. The plan is to leave the choices to the trade within the general restrictions such as prohibition of importation of ammonium nitrate. A very rough guess may be made of the demands for U.S. materials in the 12 months ordering period. Below is such a guess:

Nitrogen all forms (almost all sulfate of ammonia if available)	75,000	125,000 tons.
Superphosphate		20,000
Triple Superphosphate		60,000 - 80,000
Raw Rock Phosphate		110,000 - 140,000
Cloreto of Potassium		60,000 - 80,000

6.05. Miscellaneous other potassium fertilizer will be imported if available such as sulphate of potassium and mixed combinations.

6.06. In addition, there will be demand for phosphate minerals supplements for livestock but it is difficult to estimate quantities at this time.

6.07. Less than 8,000 tons of urea was imported last year. This is only 3% of the value of total fertilizer imports. None of these came from the U.S. A prohibition on import of urea from the U.S. should not be a hardship.

C. Procedure and Plan for Use of the Dollars

6.08. The dollars would be used in accordance with the following criteria:

- (1) The dollars would be "tied" to imports of fertilizer from the U.S.
- (2) The dollars would be "additional" to the "normal" import volume of fertilizer from the U.S. and all other sources.
- (3) The dollars would be utilized within the existing banking and commercial procedures of the fertilizer import trade.

(1) Additionality of U.S. Exports

6.09. In 1962, Brazil imported approximately \$6 million of fertilizer from the United States; in 1963, of a global fertilizer import pattern of \$22 million, approximately \$4 million was from the United States. In arriving at a reasonable pattern of normal imports,

the Mission has taken the average of 1962 and 1963. Accordingly, a basic principal of the loan is that in order to be eligible to draw down the \$15 million provided under this loan, Brazil would have to use at least \$5 million of its own exchange for purchases of fertilizer imports from the United States.

6.10. It is recognized that this average may not be altogether representative of the pattern that would be expected to take place in 1964. Thus in 1964 the Russian and Chinese demand for fertilizer has already tied up fertilizer sources in eastern and western Europe which otherwise would probably be competing for the Brazilian market. This development in turn might be expected to open up a larger market for U.S. exporters. However, because of the inability of the GOB to meet its debt obligations, U.S. exporters have been reluctant to extend credit to Brazil. Thus it is not clear that, solely as a consequence of the increased demand upon European fertilizer sources and a consequent diminishing of competition for the Brazil market, there would be an increase in U.S. fertilizer exports to Brazil.

(2) Existing Commercial Procedures

6.11. As previously noted in Section 5.17, imports of fertilizer are financed on a letter of credit basis.

6.12. To purchase the foreign exchange the importer enters into a contract with a bank in Brazil ("exchange contract"). In the exchange contract, the bank may be the Bank of Brazil or any bank which is authorized to operate foreign exchange. The rate of exchange is the one agreed upon by the parties in the exchange contract. Additionally, the exchange contract indicates when the importer is to deliver the cruzeiros (depending on whether the bank is extending credit for the purchase of exchange by the importer).

6.13. A "C.C.C."^{1/} is furnished to importers by the "Carteira de Cambio" (Exchange Dept.) of the Bank of Brazil. The "C.C.C." must be provided to Brazilian consulates. Without it, customs will not permit the imported goods to enter the country. The "C.C.C." is the evidence that the importer purchased the foreign exchange to pay for the importation.

^{1/} Certificate of exchange cover.

6.14. Upon approval, the Exchange Dept. delivers a copy of the C.C.C. to the importer who forwards it to the exporting country for the purpose of the consular "visa". Another copy is forwarded to customs for the purpose of the later clearance which makes it possible for the goods to enter the country.

6.15. Once the goods are shipped, the exporter presents his documents to the "advising bank" and receives payment (letter of credit).

(3) Proposed Procedures

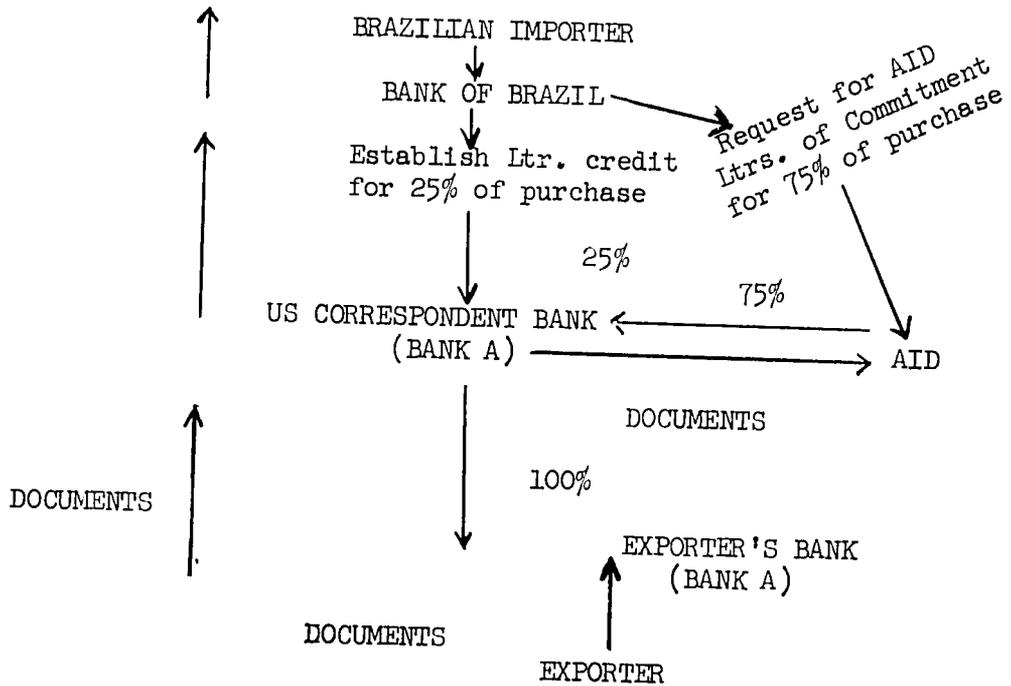
6.16. The basic principle of disbursement would be (a) that AID dollars would be tied to the disbursement of Brazilian dollars for fertilizer imports from the United States in a ratio of 3:1; (b) the Bank of Brazil would permit imports of fertilizer in excess of \$30,000 for any one importer per week.

6.17. The system would work as follows:

- (1) The importer would enter into an exchange contract with the Bank of Brazil at an agreed upon rate of exchange and obtain a C.C.C.
- (2) The C.C.C. approval would provide 75% of the contract be financed with AID dollars, specify the necessary AID documentation, and that 25% of the contract be deposited by the Bank of Brazil.
- (3) The BOB will advise AID to open Letter of Commitment in favor of its correspondent Bank for 75% of the C.C.C., and will concurrently deposit dollars to the same account in the same U.S. bank equivalent to 25% of the CCC.
- (4) The correspondent Bank will then confirm a letter of credit in favor of the Exporter's Bank.

- (5) The Exporters Bank will notify the exporter that by the terms of the LOC, this is an AID financed shipment and inform of the specific document requirements contained therein.
- (6) The exporter will receive payment upon presentation of his documents to his Bank.
- (7) The counterpart would be deposited by the BOB to the special account at the rate of exchange and at the time it receives cruzeiros from the importer..
- (8) Under the above procedure the AID dollars will be funneled into the normal import financial procedures with a minimum dislocation of normal import procedures (the only dislocation with respect to the exporter being the requirements that he supply the requisite AID documentation).

6.18 The following flow chart shows the various relationships.



D. Standard Commodity Procedure

6.19. The standard commodity procedure will be used. Notification of U.S. business, however, will be accomplished in the following manner:

At the time the loan is approved there will be a simultaneous publication of the names and addresses of the 30 most important Brazilian importers of fertilizer as well as the name and address of the Sao Paulo Fertilizer Trade Syndicate. The publication will be made in a U.S. Fertilizer Trade Journal.

VII. TOTAL ADDITIONALITY

7.01. Central to the objectives of this loan is the concept of additionality, i.e. that the actual imports of fertilizer into Brazil rise by at least one-third in each of two calendar years as a minimum, or two-thirds in one calendar year as a maximum. While a mechanism to insure that imports from the U.S. will be additional to the present level of \$5 million has been introduced here, no such mechanism is considered feasible to insure that the remaining \$17 million will be imported from other sources. The terms of this loan, however, establish criteria by which both parties can insure that the normal imports of fertilizer are not financed by this loan. This mechanism will work in the following manner:

7.02. In addition to usual imports of fertilizer from U.S. sources of \$5 million, the Government of Brazil will agree to maintain its usual imports of fertilizers at previous levels approximating \$17 million, during the calendar years 1964-1965 - the period of disbursement of this loan. This will raise fertilizer imports into Brazil to at least \$60 million during this period - an average of \$30 million per year, but will not limit an even faster disbursement if this is warranted.

7.03. Thus, the Government of Brazil will agree to maintain normal imports of fertilizers which will be evidenced by a cumulative monthly average of fertilizer imports of \$1,750,000 as documented by CCC's issued by the Bank of Brazil against its own exchange resources.

7.04. The Joint Committee will conduct periodic reviews to determine whether such an average is being maintained. Whenever the CCC's issued for imports of fertilizer not financed by this loan fall below a cumulative monthly average of \$1,750,000, the GOB and the GOUS will, through the Joint Committee, determine the factors which have led to failure to maintain such an average. If in the judgment of A.I.D. the failure to maintain the average is due to the BOB not approving CCC's or to otherwise failing to make available foreign exchange for non-loan financed fertilizer or in any other fashion obstructing the importation of such non-loan financed fertilizer, A.I.D. may unilaterally discontinue disbursements until Brazilian financed imports documented by CCC's have reached a level sufficient to reestablish such an average.

VIII. REPAYMENT PROSPECTS

8.01. With respect to repayment capacity, it must be recognized that at present Brazil faces a severe balance of payments problem as mentioned in Section (2) above. A large element in this problem is the debt problem.

8.02. In recognition of the fact that debts during 1964-1965 are beyond Brazil's capacity to pay, foreign creditors have agreed to discuss the rescheduling of these payments. Assuming successful conclusion of the negotiations Brazil would still be left with a relatively high ratio of debt services to exports (30% to 40% of current export totals) over the next few years. Debt service requirements however are comparatively light after the next ten years.

8.03. Thus, the terms of this loan, including a ten year grace period and 30 years for repayment are fitted to the repayment capacity of the country.

IX. IMPACT ON U.S. ECONOMY

9.01. The loan will finance \$15 million increase in U.S. exports to Brazil. Accordingly, the impact on the U.S. economy will be favorable.

9.02. The fertilizer will be distributed through private channels. Therefore, it is not possible to absolutely insure against diversion of the fertilizer financed under this loan to such export crops as coffee and cotton. However, the structure and administration of this loan gives reasonable assurance that such diversion is not likely to occur:

- (a) The devices used herein to lower the cost of fertilizer to the food producer will

provide economic incentive for him to increase his production of foodstuffs rather than divert it to other users.

- (b) Continuous analysis and evaluation of the relationship between arrivals of fertilizer financed under this loan and the requests for rediscount of eligible loan paper will enable the joint committee to detect any diversions and take remedial action.

X. IMPLEMENTATION PLAN

See Section VI of this paper.

XI. ISSUES

None.

XII. RECOMMENDATIONS

Authorization of a loan to the Government of Brazil through the Minister of Finance for an amount not to exceed fifteen million dollars (\$15,000,000.00) with the following terms:

(a) The Borrower shall repay the loan to A.I.D. in United States dollars within forty years (40) from the first disbursement under the loan with a grace period of not to exceed ten (10) years. The Borrower shall pay to A.I.D. in United States dollars on the disbursed balance of the loan interest of three quarters of one (3/4%) percent per annum during the grace period and two (2%) percent per annum thereafter.

(b) Other Terms and Conditions:

i. Designation by the Bank of Brazil and the Ministry of Agriculture of the Member of the Joint Committee to administer the loan;

ii. Agreement by the Borrower to maintain its usual total imports of fertilizer during the period of disbursement of the loan.

iii. Equipment, materials and services financed by the loan shall be procured from the United States of America (excepting marine insurance which under appropriate conditions may be procured from other sources).

(c) Such other Terms and conditions as A.I.D. may deem advisable.

FERTILIZER IMPORTS

A N N E X E S

- ANNEX I - Statutory Annex
- ANNEX II - Miscellaneous Exhibits
1. Agronomic Text Results
 2. 1962 Fertilizer Imports
 3. Certificate Exchange Cover
 4. Imports of Fertilizers 1950 - 1963
- ANNEX III - Draft Loan Authorization

CHECK LIST OF STATUTORY CRITERIA (ALLIANCE FOR PROGRESS)

- # * 1. Foreign Assistance Act of 1961, as amended (hereinafter FAA), Section 102. The loan will further the policy of the Act, as stated in this Section. Every possible precaution will be taken to assure that loan proceeds are not diverted to short-term emergency purposes (such as budgetary purposes, balance of payments purposes, or military purposes) or any other purpose not essential to the long-range economic development of Brazil.

- # * 2. FAA Section 201(d). Loan funds are not to be loaned or re-loaned at rates of interest which are excessive or unreasonable for the Borrower, or higher than the applicable legal rate of interest in Brazil. See "Detailed Description of the Project".

- * 3. FAA Section 202(c), Foreign Aid and Related Agencies Appropriation Act of 1964 (hereinafter "App."), Section 117. Funds have been appropriated by Congress for this loan.

- * 4. FAA Section 204. The terms and conditions of the loan are in accordance with standards and criteria established by the Development Loan Committee.

- # * 5. FAA Section 251(a). The loan will promote economic development in Brazil and will contribute to the welfare of its people.

* Affirmative finding required by law.

Discussed here or elsewhere in loan paper.

- # 6. **FAA Section 251(b)(1). Account has been taken of the extent to which Brazil (including its political subdivisions) is adhering to the principles of the Act of Bogota and Charter of Punta del Este, is showing a responsiveness to the vital economic, political and social concerns of its people, and of the extent to which Brazil has demonstrated a clear determination to take effective self-help measures. See "Place of the Loan in the Program".**

- # 7. **FAA Section 251(b)(2). The activity to be financed is economically and technically sound. See "Economic Justification" and "Execution of the Project".**

- # 8. **FAA Section 251(b)(3). The activity is consistent with and is related to other development activities being undertaken or planned and will contribute to realizable long-range objectives. See "Economic Justification".**

- # 9. **FAA Section 251(b)(4). The loan will have no foreseeable adverse effect on the U. S. economy. See "Impact on U. S. Economy".**

- # 10. **FAA Section 251(b). Financing from other free world sources (including private sources within the United States) on reasonable terms for the project is not available.**

- # 11. **FAA Section 251(b). The terms of the loan (interest, grace period and amortization) are reasonable under circumstances affecting the loan and the capacity of Borrower to repay.**

UNCLASSIFIED

12. FAA Section 251 (b). Account has been taken of the extent to which Brazil is making reasonable efforts to encourage repatriation of capital invested in other countries by its own citizens.
13. FAA Section 251 (b). There are reasonable prospects that the loan will be repaid. See "Repayment Prospects"
14. FAA Section 251 (e). An application has been received for this loan which gives sufficient information and assurances to indicate reasonably that the funds will be used in an economically and technically sound manner.
15. FAA Section 251 (g). Cruzeiros generated from the sale of the foreign exchange from the loan will be available for financing the sale of fertilizer by cooperative to farmers and for the construction of cooperative fertilizer producing facilities.
16. FAA Sections 601 (b); 621. The loan will be administered in such a manner as to encourage and facilitate participation by private enterprise to the maximum extent practicable.
17. FAA Section 602. The alternative financing procedure is being requested for this loan.
18. FAA Section 604 (a). Equipment, materials, and services financed for the project under the loan shall be procured from the United States.

- * 19. **FAA Section 604(b).** Any commodities financed by the loan and purchased in bulk will be purchased at prices no higher than prevailing U. S. market prices.
- * 20. **FAA Section 604(d).** Marine Insurance on commodities shipped will be required to be placed with a U. S. company unless A.T.D. agrees otherwise.
- * 21. **FAA Section 611(a)(1).** Necessary substantive technical and financial planning for the project has been completed, and a reasonably firm estimate of cost of the project to the United States has been obtained. See "Economic Justification" and "Execution of the Project".
- * 22. **FAA Section 611(a)(2).** No further legislative action in Brazil in required for implementation of the project.
- * 23. **FAA Section 611(b), App. Section 101.** The project does not involve water or related land resource construction.
- * 24. **FAA Section 611(c).** No construction contracts will be financed by the loan.
- * 25. **FAA Section 619.** Not applicable. Brazil is not a newly independent country.

UNCLASSIFIED

- * 26. FAA Section 620(a), App. Sections 109(a), 109(b). No assistance will be furnished under this loan to the present government of Cuba, nor does Brazil furnish assistance to the present government of Cuba. Brazil has taken appropriate steps to prevent ships or aircraft under its registry from engaging in any Cuba trade.
- * 27. FAA Section 620(b). The Secretary of State has determined that Brazil is not controlled by the International Communist Movement.
- * 28. FAA Section 620(c). As far as AID knows Brazil is not indebted to any U. S. citizen for goods or services furnished or ordered, where such a citizen has exhausted available legal remedies or where the debt is not denied or contested by or the indebtedness arises under an unconditional guaranty of payment given by Brazil.
- * 29. FAA Section 620(d). Loan funds will not finance construction or operation of any productive enterprise which will compete with United States enterprise.
- * 30. FAA Section 620(e). Neither the government of Brazil nor any governmental agency or subdivision thereof has, on or after January 1, 1962, nationalized, expropriated, or seized ownership or control of property of any U. S. citizen or firm, taken steps to repudiate or nullify existing contracts with such citizens or firms, or imposed or enforced discriminatory taxation or other exactions or restrictive conditions, or taken other actions having the effect of nationalizing, expropriating or otherwise seizing ownership or control of property owned by U. S. citizens or firms, as specified in this section of the Act, without taking appropriate steps to discharge its obligations, as specified in this section of the Act.
- * 31. FAA Section 620(f), App. Sections 109(a), 109(b). Assistance provided by this loan will not be furnished to any Communist country.
- * 32. FAA Section 620(g). Assistance provided by this loan will not be used to compensate for expropriated or nationalized property.

UNCLASSIFIED

33. FAA Section 620 (h). Assistance provided by this loan will not be used in a manner which promotes or assists foreign aid projects or activities of the Communist bloc countries.
34. FAA Section 620 (i). The President has not determined that Brazil is engaging in or preparing for aggressive military efforts directed against the United States, or any country receiving assistance from the United States, or against any country to which sales are made under PL 480, nor is any basis for such determination known to A.I.D.
35. FAA Section 636 (h). This loan will make available funds only for the foreign exchange costs of importing fertilizer into Brazil. Within Brazil transactions will be handled through private trade channels in which Brazil users of the fertilizer will have to pay all of the costs involved in cruzeiros.
36. App. Section 102. Obligations of funds in excess of \$25,000 for engineering fees to any firms or group of firms financed under the loan will be reported to the committees on appropriations of the Senate and House.
37. App. Section 104. Funds obligated by the loan, will not be used to pay pensions, annuities, etc., as prohibited in this section.
38. App. Section 111. U. S. personnel to serve under contracts for services financed by the loan shall have security clearance.
39. App. Section 112. Firms which provide engineering, procurement, and construction services financed by the loan for the project, and the terms of their contracts, shall be approved by A.I.D.

- 40. App. Section 114. Loan funds will not be used to make any payment to the U. N.
- 41. App. Section 118. No construction work will be financed by the loan.
- 42. App. Section 601. Loan funds will not be used for publicity or propaganda purposes within the United States.

EXHIBIT I

AGRONOMIC RESULTS

Results of agronomic experiments with the use of nitrogen, phosphate and potassium in São Paulo, Paraná, Rio Grande do Sul and Rio de Janeiro states were summarized to determine the yield response to commercial fertilizers. Increased yields resulting from fertilization were valued using February and March, 1964 crop prices. Fertilizer prices were based on the price of ammonium sulfate, normal superphosphate and potassium chloride, plus 25 percent, to cover coast related to the proportion of the total plant nutrients sold as mixed fertilizers. The prices were then computed in terms of the available element as follows: N, 426.7 Cr\$/kg; P_2O_5 , 270.2 Cr\$/kg; and 156.2 Cr\$/kg. These prices do not include transportation costs to the farm nor application costs.

Phosphate

The application of P_2O_5 on wheat in experiments carried out in São Paulo, Paraná and Rio Grande do Sul resulted in increases in net returns per hectare from fertilization of Cr\$ 25,545 to Cr\$ 123,803. A series of three experiments in São Paulo on sugar cane increased net returns per hectare by Cr\$ 47,120, 116,806 and 230,930. A similar series of three phosphate experiments on rice in Rio Grande do Sul boosted net returns per hectare by Cr\$ 4,116, 14,159 and 75,38. The return of Cr\$ 4,116 resulted from experiments using rock phosphate rather than a more soluble form of P_2O_5 . Two experiments in São Paulo on rice increased net returns by Cr\$ 7,000 and Cr\$ 77,243 per hectare. Two studies of the application of phosphate on cotton in São Paulo indicated gains in net returns of Cr\$ 18,378 and Cr\$ 28,866 per hectare.

Nitrogen

The application of nitrogen on two coffee experiments in São Paulo indicated increases in net returns of Cr\$ 81,320 and Cr\$ 85,496 per 1000 trees. A similar series of nitrogen experiments on corn in São Paulo raised net returns by Cr\$ 5,333 and Cr\$ 16,412 per hectare. A series of seven experiments applying nitrogen to sugar cane in São Paulo resulted in gains in net returns per hectare ranging from Cr\$ 5,564 to Cr\$ 124,888, with an average net return of Cr\$ 43,104 per hectare.

Potash

Four experiments with potassium on sugar cane in São Paulo resulted in higher net returns per hectare from fertilization ranging from Cr\$ 39,324 to Cr\$ 180,442, with an average net return of Cr\$ 98,004. One experiment applying potassium to wheat in Rio Grande do Sul indicated a gain of net return of Cr\$ 29,260 per hectare. Similar single experiments of potassium on cotton and coffee in São Paulo raised net returns per hectare by Cr\$ 10,270 and Cr\$ 54,960 respectively.

NATIONAL IMPORTS OF FERTILIZER 1962 - BRAZIL

COUNTRY OF ORIGIN

Produtos	U.S.A.	Alemanha Ociden.	Itália	Holanda	Bélgica	Diversos	Total Tons.	Total-Cl. US\$ 1.000
Salitre Sódico						1) 32.438	32.438	1.809
Nitrato de Sódio		199					199	1
Salitre Potássico						2) 12.299	12.299	80
Sulfato de Amônio	12.326	63.891	2.460	2.700	22.186	3) 14.189	117.752	5.097
Sulfonitrato de Amônio		6.244			733		6.977	413
Nitrato de Amônio								
Cal		3.406				4) 1.020	4.426	202
Nitrato de Cálcio		464					464	26
Uréia		2.730	1.279	3.677		5) 3.484	7.821	680
Cianamida de Cal						6) 168	168	16
Superfosfato Sim	10.196			854		7) 3.187	14.237	78
Superfosfato Triplo	36.904	386	1.024	5.317	569		44.200	3.051
Fato Natural								
Prato	76.806					8) 19.074	95.880	1.804
Postato Bicálcico					2.925		2.925	195
Escória de Thomas	n	810			1.488		2.298	70
Termofosfato						9) 2.079	2.079	125
Clorato de Potássio	33.036	23.636			388	10) 48.687	105.747	5.290
		2.030	674		2.447	11) 1.214	6.365	442
Sulf. Potássio e Magnésio	227	2.853					3.080	161
Adubos Complexos	13	512					525	52
TOTAL (Tons.)	169.508	106.991	4.258	10.548	30.736	137.836	459.880	-
Valor CIF em US\$ 1.000	6.531	5.211	243	697	1.488	6.180	-	20.768

- 1) Chile - 2) Chile - 3) Austria (8.986), France (1.952), Russia (3.251 T)
 4) Austria (680 T), France (340 T) - 5) Norway (2.977) - Swiss (477 Tons) Trinidad 30 T
 6) Japan (168 T) - 7) Yugoslavia - 8) Africa - 9) Japan - 10) France (23,143 T)
 Russia (21.921 T) - Israel (4.064 T) - 11) East Germany

FONTE- Divisão de Estatística do Ministério da Fazenda.

IMPORTAÇÃO DE MERCADORIA DA CATEGORIA GERAL
CERTIFICADO DE COBERTURA CAMBIAL

Para preenchimento pela CARTEIRA DE CÂMBIO
CERTIFICADO N.º
Válido para embarque(s) até

CARTEIRA DE CÂMBIO
BANCO DO BRASIL S. A.

Operação de câmbio n.º Data

Banco Prazo (em dias)

Valor TRL n.º

Para os fins previstos na Instrução n.º 204, de 13.3.61, da SUMOC, solicitamos informar que contratamos câmbio para efetuar a importação de mercadoria da Categoria Geral, cujas características declaramos a seguir:

MERCADORIA				Preço FOB em moeda estrangeira	
Item de tarifa	Peso líq. em kg	Quantidade	DISCRIMINAÇÃO	Unitário	Total
			Despesas diversas		
			Valor FOB da importação em moeda estrangeira		
			Valor aproximado do frete e seguro		
			Valor CIF/C&F da importação em moeda estrangeira		

País de origem	País de procedência	Pôrto de descarga	Local do fechamento de Câmbio	Valor em Cr\$ (FCB)

Consignatário: (Indicar somente nos casos previstos no Decreto n.º 48.785 de 11.6.60)

(Praça) (Data)

Assinatura do importador (indicando o nome completo em carimbo ou a máquina)

Protocolo n.º

Enderço Telefone

Observações:

PARA PREENCHIMENTO PELA CARTEIRA DE CÂMBIO

Para os fins previstos na Instrução n.º 204, de 13.3.61, da SUMOC, confirmamos que o importador supra contratou câmbio exclusivamente para o valor "FOB" da importação da mercadoria acima declarada, no montante de
(Por estorno em moeda estrangeira)

O fornecimento do presente documento não implica o reconhecimento, pela Carteira de Câmbio do Banco do Brasil S. A., da exatidão dos preços declarados pelo importador, cuja verificação será feita pela Carteira de Comércio Exterior, de acordo com o Art.º 5.º do Decreto n.º 43.713, de 17-5-58.

..... (Praça) (Data)

Para prova perante a autoridade consular

BANCO DO BRASIL S. A.
CARTEIRA DE CÂMBIO

IMPORTS OF FERTILIZERS 1950-1963

Tons of Elements						
Nitrogen (N)			Phosphates (P ₂ O ₅)			Potassium (K ₂ O)
Domestic Prod.	Imports	Total	Domestic Prod.	Imports	Total	Total
1950	751	13,436	5,999	44,837	50,836	23,523
1951	760	17,801	6,450	67,119	73,569	28,709
1952	830	9,775	8,444	38,479	46,923	15,347
1953	930	19,649	8,533	56,283	64,816	31,226
1954	1,276	16,486	12,080	65,309	77,389	28,348
1955	1,223	21,728	23,842	64,733	88,575	49,523
1956	1,388	28,850	23,553	70,006	93,559	41,632
1957	1,194	27,364	28,558	41,380	77,309	118,689
1958	2,578	38,812	53,478	89,871	143,349	65,082
1959	10,679	34,106	44,785	68,486	55,519	124,005
1960	15,726	51,034	77,427	54,165	131,591	106,146
1961	12,021	43,043	69,766	49,000	118,766	70,727
1962	12,627	36,680	49,307	61,910	55,440	117,350
1963	18,700	46,892	65,592	41,400	96,423	84,209

UNCLASSIFIED

AID-DLC/P-268/A-Draft Revised

ANNEX III, Page 1 of 2

Corrected June 30, 1964

LOAN AUTHORIZATION

Provided from: Alliance for Progress Funds
BRAZIL - Fertilizer

Pursuant to the authority vested in the Administrator of the Agency for International Development (A.I.D.) by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Part I, Chapter 2, Title VI, the Alliance for Progress, to the Government of Brazil (Borrower) of not to exceed fifteen million United States dollars (\$15,000,000) to assist in increasing the production of certain food crops by making available U. S. fertilizer to Brazilian food producers at prices and on terms more favorable than those now available in Brazil, and by financing the United States dollar costs of the importation of fertilizer into Brazil from the United States, this loan to be subject to the following terms and conditions:

1. Interest and Terms of Repayment:

Borrower shall repay the loan to A.I.D. in United States dollars within forty (40) years from first disbursement under the loan, including a grace period of not to exceed ten (10) years. Borrower shall pay interest to A.I.D. in United States dollars on the disbursed portion of the loan, of three-quarters of one (3/4 of 1) percent per annum during the grace period and of two (2) percent per annum thereafter.

2. Other Terms and Conditions:

- a. Prior to the first disbursement, A.I.D., the Bank of Brazil and the Ministry of Agriculture shall establish a joint committee to administer the loan;
- b. Borrower shall agree to maintain its usual total imports of fertilizer during the period of disbursement of the loan.

UNCLASSIFIED

- 2 -

- c. Equipment, materials and services financed by the loan shall be procured from the United States of America (excepting marine insurance which under appropriate conditions may be procured from other sources).
- d. Such other terms and conditions as A.I.D. may deem advisable.

Administrator

Date

UNCLASSIFIED CLASSIFICATION

For each address check one ACTION INFO

TO - AID/W TOAID A 1265

FROM - RIO DE JANEIRO

SUBJECT - NONCAPITAL PROJECT PAPER (PROP) Seed Industry Development

REFERENCE -

DATE SENT 12/23/69

BR LST

14p.

DISTRIBUTION ACTION INFO.

ACONT OLAB ITAD TAB ITU OFF FFP

COUNTRY: BRAZIL PROJECT NO: 512-15-150-247.5

SUBMISSION DATE: December 12, 1969 ORIGINAL: X

PROJECT TITLE: Seed Industry Development

U.S. OBLIGATION SPAN: FY 1965 through FY 1971

PHYSICAL IMPLEMENTATION SPAN: FY 1964 through FY 1972

GROSS LIFE OF PROJECT FINANCIAL REQUIREMENTS:

U.S. Dollars	\$1,917,000
U.S. Owned Local Currency	119,000
Cooperating Country Cash Contribution (TF)	180,000
(CONTAP)	246,000
TOTAL	\$2,462,000

State Agr Com PC BB TRSY DOD

PAGE 1 OF 12

DRAFTED BY BWhittle/nc	OFFICE ARDO	PHONE NO. 209	DATE 12/12/69	APPROVED BY: ADPR: Harrison
---------------------------	----------------	------------------	------------------	--------------------------------

AID AND OTHER CLEARANCES PRPC: MFox PRPC: JHulehan		ARDO: Wrogers CONT: Newton
--	--	-------------------------------

UNCLASSIFIED CLASSIFICATION

ACTION OFFICE - When ACTION completed, return this copy to OFFICIAL FILE STATION or appropriate OFFICIAL FILE.

NO ACTION NECESSARY	
DATE	SIGNATURE

SUMMARY

In 1963 this Brazil-USAID cooperative project was initiated having as its primary objective the establishment of the necessary programs and facilities to assure Brazilian farmers of an adequate quantity of high quality seeds at reasonable costs. The means required to assure achievement of this objective were agreed to be:

- (a) establishment of an integrated federal-state seed improvement program;
- (b) enactment and enforcement of federal and state seed legislation, including minimum seed quality standards, seed testing rules, and associated regulations;
- (c) training a corps of Brazilian seed technologists in all phases of seed technology;
- (d) equipping seed laboratories, conditioned storage and other facilities, and
- (e) the development of the commercial seed industry in the private sector.

The present emphasis of this project is to develop a corps of trained Brazilian seed technologists in the private and public sectors capable of developing the Brazilian seed industry so that it will be able to provide Brazilian producers with a continuous supply of high quality seeds and seedlings at realistic prices.

This project is essential to meeting the broad objectives of the agricultural sector, which are to improve the diet of a rapidly expanding population and provide additional commodities for export. The use of improved seeds of agricultural crops has been conclusively proven as one of the essential elements for increasing agricultural productivity.

Availability and use of improved seed in conjunction with improved cultural and managerial practices, fertilizer application, weed control, irrigation, etc. has a synergistic rather than additive effect. It is conservatively estimated that the use of improved seed can result in yield increases of from 30% to 100% on farms where common, untested seeds are being planted. In conjunction with other improved practices productivity can be increased by 100% and more.

The GOB, although recognizing the importance of developing an industry to supply farmers with the high quality seeds required for efficient production, needs the technical inputs essential for ^{organizing} and training appropriate personnel to establish a viable seed industry.

The Brazilian Ministry of Agriculture, through its Office of Crop Production (EPV) and Office of Agricultural Research (EPE), has general responsibility for coordinating and carrying out the project. The primary operational responsibility for implementation of the project is with the Technical Team for Seeds and Seedlings (ETESEM), a technical branch of EPV. The principal function of ETESEM is to implement the National Plan for Seed Improvement (PLANASEM), promulgated by the Ministry in July 1968.

The project is also carried out in conjunction with the various State Secretariats of Agriculture, regional organizations such as SUDENE, and the private seed industry.

By the time the project phases out in 1972, it is expected that the following targets will have been met:

1. legislation which will provide controls and regulations for seeds distributed throughout Brazil;
2. seed laboratories, processing plants, and/or storage rooms, equipped and functioning in those states where they are most needed;
3. development of a private seed industry as a result of a change in philosophy concerning the role of government in the industry;
4. academic training to the MS level provided for 25 Brazilian technicians plus 60 selected leaders in the industry who will receive short-term study and specialized training in the U.S.; approximately 1700 additional technicians trained through short courses in seed technology, administered in Brazil;
5. seed multiplication and distribution systems established at state, regional and national levels;
6. promoting the use and production of seed and plant material of superior crop varieties;
7. planning and conducting seed research.

Considerable progress has been made in meeting the above goals, but much work remains to be done. USAID assistance will continue to be provided to ~~the~~ this project until 1972.

The Brazilian contribution and participation in the project has been more than satisfactory to date. It is given high priority in the Ministry of Agriculture. The essential national seed legislation has been passed and a committee has been established to work out plans for interpreting and implementing the laws and regulations. Installations for seed analysis, processing and ~~storage~~ storage have been established in several states and 34 short courses have been held for Brazilian technicians. The project is ~~as~~ progressing satisfactorily. The USAID considers that the project is more than meeting the minimum level of achievement which must be met as a requisite for continued US contribution and participation. USAID contribution and participation in the project will continue as long as the GOB assigns high priority to this project, continues to provide the necessary inputs for its successful implementation, continues to implement its stated philosophy of allowing the private sector to be responsible for seed production and distribution and limiting its activities to research, education and regulation, and continues to sponsor the short term training courses for seed technicians throughout Brazil.

The inputs needed to achieve the seven operational targets enumerated in section IV of this PROP will be provided principally by USAID and the Brazilian Ministry of Agriculture. Technical assistance is to be provided through an AID contract with Mississippi State University (MSU). U.S. grant funds will be provided to pay costs of US contract technicians as well as participant training and importation of limited amounts of essential equipment such as seed processing equipment, ~~dehumidifiers~~ dehumidifiers, seed germinators, dryers, and seed analysis equipment.

The contract presently provides for two long-term seed specialists to be stationed in Rio, with short-term consultants provided as needed. The two specialists spend a large part of their time traveling throughout Brazil assisting the Ministry in the various

areas where the project is being carried out. CONTAP funding is being provided for certain essential local costs of the project. The Ministry of Agriculture is being encouraged to gradually assume a larger share of the costs now being met by CONTAP funds. A tabular breakdown of the required life-of-project inputs is provided in Annex A to this PROP.

II. SETTING

Today Brazil is faced with a rapidly increasing population. To date the yields in crop production have been increasing gradually and the farm land area has expanded to achieve a more or less static balance with the increase in population. In some regions agricultural production is carried on with the same tools and methods used a century ago. Because Brazil is largely dependent upon agriculture for foreign exchange earnings, internal investment capital and for the food and fiber needs for workers, sustained and highly effective programs must be launched or the gap between the needed agricultural production and actual production will rapidly widen during the next ten years.

In recognition of the need to narrow this gap the Brazilian Government has established objectives which require the modernization and improvement in agricultural production practices in order to improve quality and increase productivity in several major agricultural crops such as wheat, soybeans, rice, corn, potatoes, beans and vegetables.

In spite of the present ~~existing~~ relatively low unit production of most crops, the potential for increase through improved physical inputs ranges between 50 and 100% for the principal crops. Among these physical inputs, the greater use of improved seeds is one of the GOB and USAID priorities in the Agricultural sector.

(Numerous reports are available in AID/W and USMID/Brazil on the Brazilian agricultural sector and the reader is referred to them for background information. The importance of agriculture to the Brazilian economy is well documented. It is easily the most important economic activity in Brazil, employing more than one-half the total labor force. The ~~agricultural~~ agricultural sector analysis, now being completed by USMID/Brazil, will provide a detailed analysis of this sector including a discussion of the many problems which the sector faces).

Seeds are basic to agriculture. ~~Normally~~ Normally it takes no better soil, no more fertilizer, and no less labor to produce a crop from poor seed than from good seed. Consequently, when farmers plant seed of a quality less than the best available, it costs them money and deprives the country of food, feed, and fiber. In Brazil farmers pay too little attention to the selection of seeds destined for planting, not realizing that the substitution of improved varieties would result in a considerable increase in crop returns.

There was no general thought given to a national seed improvement program until the early sixties, although as early as 1934 the State of São Paulo initiated work relative to legislation concerning seed. In 1936, the São Paulo state government made official the inspection of seeds entering commerce and also established regulations relative to the ~~production~~ production and marketing of seeds. During the period 1940-1960, considerable attention was given to seed improvement in this state, but it was directed toward the

development of production controlled by the state government. The result was the establishment of a state seed production program which today represents a major tax burden as well as a political obstacle in the effort to shift emphasis on seed production and distribution from the public to the private sector.

In Brazil, as in many countries, seed of the major crops is saved and planted with little or no attention given to analysis for genetic properties, physical impurities, or viability. In the case of beans, for example, less than 1% of all seeds ~~planted~~ planted are considered as ~~improved~~ "improved". In the case of corn, during the decade 1950-1960, a real effort was made by both government and private enterprise to increase the production of hybrid and synthetic varieties. As a result it is now estimated that in the ~~principal~~ principal corn-producing states, 35% of all corn seed is considered as being improved. The percentage of improved seeds used among other principal crops, however, is estimated to be about 10%.

Vegetable seeds which require a relatively high degree of technology to be produced with sufficient quality to enter commerce are practically all imported from the United States or Europe. In the three-year period 1960-1962 Brazil imported annually an average of about 500 tons of vegetable seeds valued at 1 million dollars. These seeds normally arrive in excellent condition but often deteriorate rapidly because few companies which import or distribute seeds have storage rooms with proper humidity and temperature control to maintain seed viability. There is no law requiring that even minimal information about variety, purity, germination, or origin be given the buyer. Consequently, purchasers often find themselves with seeds of nondescript variety having little or no possibility of germinating or producing the crop expected.

There are a number of reasons why the seed industry has not developed in Brazil. Principal among them are the following:

1. Failure on the part of government entities to educate farmers as to the advantages of improved seeds.
2. Lack of technical knowledge and facilities required to permit production and preservation of seeds having the required characteristics of purity and quality.
3. Resistance on the part of farmers in acquiring improved seeds due to higher prices than those paid for "common" seeds.
4. Lack of coordination between the entities which develop improved varieties and those concerned with the multiplication of these basic seeds.
5. Inability of seedsmen to obtain long-term financing for construction of seed processing and storage facilities or short-term financing to purchase and distribute seeds.
6. Lack of continuity in research programs carried out at governmental institutions due to lack of sufficient resources, administrative problems, and other factors.

Brazil hosted the IV Pan-American Seed Seminar, held in Rio in August 1963, and at that time evidenced a ~~strong~~ strong desire for assistance in developing a ~~seed~~ viable seed industry. With this expression from the GOB along with ~~xxxxxxxxxxxxxxxx~~

recommendations from U.S. consultants in seed technology attending the seminar (who also took advantage of the visit to make an evaluation of the situation in Brazil), it was decided that a seed improvement program could successfully assist in greatly increasing total agricultural production in the country, thus contributing to the GOB and USAID overall goal of providing more products for improving the diet of a rapidly expanding population and for export.

III. STRATEGY

It was originally planned to locate this project at the Agronomic Institute of the South located in Palotas, Rio Grande do Sul with USAID assistance being provided to only that one institution. This would have served as a training center for seed technicians from other parts of Brazil and would have been a focal point for the production and distribution of improved seeds throughout the south. Further study led to the conclusion that more could be accomplished by giving the project national scope, yet relying heavily on the more developed area of the south in providing facilities and a core of trained Brazilian specialists for training courses to be offered there.

The strategy decided upon was to adopt a flexible approach to individual operational targets throughout the country. This involves working with the Ministry of Agriculture, State Secretaries of Agriculture, rural universities, and private industry in assisting with preparation of seed legislation, establishing laboratories for seed analysis, processing plants and storage rooms, and in training personnel in the various aspects of these activities. Since enactment of appropriate seed legislation was paramount to the success of a program involving inspection and control by an official agency from the initial stages of production to final delivery to the end user, discussion with key government officials concerned with the development of the industry was required and was given high priority.

The USAID contractor, Mississippi State University, works through the appropriate division of the Ministry of Agriculture to assist in bringing about coordination of seed programs with all agencies.

As stated above the Ministry of Agriculture assigns this project high priority and is providing the necessary support and leadership to make the project successful.

The development of a viable seed industry is directly related to the USAID and GOB overall goal of increasing the quality and quantity of the major agricultural crops which are needed to improve the diets of the local population and increase exports. This project is related to several other USAID projects.

A major portion of the agricultural research and varietal development activities are conducted by the research division of the Ministry of Agriculture, which is being assisted by USAID through a contract with the IRI Research Institute, Inc. Because improved varieties are the life blood of a seed industry, there is a very close mutual working relationship between these two projects in the development of basic seed maintenance and multiplication programs so farmers can receive the full benefits of the research effort. It is anticipated that a cooperative seed project will be established at each of the Ministry's eight regional research stations.

This project also complements the assistance being provided through the four USAID rural university development contracts. Educational and research programs in seed improvement at both the undergraduate and graduate levels will coincide with curricula improvement, particularly in the agronomic and horticultural courses at these universities. It was necessary to provide specialized equipment, training materials and technical assistance to the research and educational programs as they developed. The Agricultural College of the State of São Paulo, where the USAID-Ohio State University contract is located, was chosen as the site for the development of a university level in-country training center as an ~~important~~ important adjunct to the participant training program of this project.

The ~~main~~ success of the agricultural credit program will have a direct interrelationship with the success of this project both at the farm production level and in the development of the private sector of the seed industry. It has been shown that farmers using improved varieties and other improved cultural practices are better able to repay production loans; thus some lending agencies have established the use of good seeds of improved varieties as one of their loan requirements. The necessary capital for equipment purchase and construction needed for the development of the private seed industry is presently lacking and will need to be provided by the GOB credit system, by foreign loans, or a combination of the two.

This project is also of assistance to the Food for Development, Peace Corps, and U.S. Department of Agriculture (FAS) programs in Brazil. Each of these activities has definite use for expertise in the field of seed technology that will be ~~available~~ available through this project. Support provided by this project will assist in bringing success to their in-country programs as well as providing a more accurate exchange of information between the Brazilian and U.S. commercial seed trade.

IV. PLANNED TARGETS AND COURSE OF ACTION

Target No 1 - Enactment of a National Seed Law to control international and interstate commerce and to establish broad principles under which state laws can be developed

The average ~~farmer~~ farmer plants untested seed of unknown quality and doubtful varietal purity. Seed legislation is necessary to assure farmers that the seed has been tested and then labeled with reliable information. Legislation is also needed to protect honest, reliable seedsmen from the practice of careless, irresponsible, or dishonest competitors. In the development of legislation, the basic requirement of the law must be set forth by a working committee of technicians having a reasonably good knowledge of seed technology. The law must be as simple as conditions will allow, easily administered and enforced. The role of both national and state laws must be carefully indicated. Methods of enforcement must be developed, laboratories established and personnel trained for the exacting work of inspectors and laboratory technicians.

Course of Action

A National Seed Law was passed by the Brazilian Congress and signed by the President in 1965. A special National Seed Committee has been appointed by the Minister of Agriculture to develop regulations regarding seed standards and control procedures. Six states have signed agreements with the Ministry to implement the law at the state level. It is expected that eventually all the states will enter into agreement with the Ministry for his purpose.

This target has largely been met and the pattern has been set for control. It is now a matter of fully implementing the existing legislation. Primary effort will be limited to work with the National Committee for Seeds and Seedlings in the development of necessary rules and regulations and assisting in the organization of the Association of Technicians in Analysis of Seeds (ATAS).

Target No 2- Establishing seed testing laboratories, seed processing units and seed storage facilities

An effective seed program cannot function without physical facilities properly designed and well located to serve specific needs. These are required in order to prepare, maintain, and accurately label seeds distributed throughout the country. This requires facilities such as processing plants, storage facilities and seed testing laboratories. These same installations also provide facilities for training technicians in seed technology.

Course of Action

It is necessary to establish a seed testing laboratory in each state capable of providing regulatory, research, and training services. With the technical knowledge provided by the Seed Technology Laboratory at Mississippi State University, information and training will be provided on the design, selection of equipment, and operation of each of the seed laboratories to be installed. Laboratories have been installed and are functioning in eleven states. Four additional states will be equipped with seed testing laboratories during the period of the project. Location of the laboratories is determined by progress of the program and availability of trained personnel.

Seed processing units will be established in states capable of supporting foundation seed stocks program, seed processing research, and training activities. The design of these facilities, selection and installation of equipment, and training in operation of these seed processing plants is being provided by U.S. technicians.

The Mississippi State University contract team has assisted in the establishment of three units which are now complete and is presently assisting in the establishment of four others. Several other units have been established by private companies, the Ministry and the States themselves with limited or no technical assistance from the contractor, but using the principles used in the units assisted by Mississippi.

The assistance to be provided to the states will be determined as the project proceeds but it is expected that a minimum of ten states should be assisted through this project in order to insure adequate facilities in appropriate regions of the country from which technical knowhow can later be disseminated to surrounding states which will eventually establish units.

Pilot-type seed storage facilities will be located in those locations where they are needed in connection with the seed testing laboratory, foundation seed stocks program and/or seed processing unit for demonstration, research, and training purposes. Instruction is being provided by MSU personnel on design and selection of equipment for special seed storage rooms with provisions for the control of temperature and humidity as well as for protection from insect and rodents. Eighteen storage rooms in eight states have been constructed primarily at research institutions and seven others will be added as the states reach the point in technical knowledge and experience which warrants installation of the storage rooms.

Target 119 - Encourage the development of a private seed industry

Experience has demonstrated that such essential services as assembling, processing, testing, labeling and distributing seed to farmers at the time and place it is needed can best be supplied by private industry. The government, on the other hand, should carry out the important role of sponsoring education and research activities and regulating the commerce in seeds.

With the government and private ~~sectors~~ sectors working together, a ~~real~~ viable seed industry can develop along with the demand for improved seeds. The most serious obstacles to the development of a private seed industry are government monopolies, inequitable subsidized pricing practices, shortage of credit and the lack of seed laws to protect honest seedsmen and farmers. ~~Elimination~~ Elimination of these bottlenecks will create a favorable ~~environment~~ environment for rapid development of a private seed industry. It is hoped that by 1972, largely as a result of this project, that most of these bottlenecks will be eliminated in much of Brazil and a strong and viable seed industry will be will on its way to full development.

Course of Action

The most effective approach has been the indirect one of encouraging the reduction of government programs in seed production and distribution to allow for the development of the private sector. Of primary importance was a change in the stated philosophy of the COB-Ministry of Agriculture from production and ~~direct~~ distribution of seeds by the government on a tax subsidy basis to one of allowing the private sector to be responsible for these activities while the government increases activities in research and education.

Through group discussions and individual contacts with Ministry of Agriculture and Secretariats of Agriculture and policy-making personnel, the advantages of the development of the private sector and alternative uses of available government inputs are explained by ~~the~~ in an effort to bring about the desired policy changes. ~~Participation~~ Participation in training courses and specific technical information in seed technology is being made available to private companies. Working in cooperation with other technical teams and Brazilian credit institutions, encouragement is being given to making available the additional credit necessary for the accelerated establishment of facilities and distribution systems in the private ~~sector~~ sector. The private sector is also being provided with guide-lines for organization of seed producer and seedsmen associations.

A logical consequence of these actions will be more governmental emphasis on research, education, regulation and inspection, elimination of public monopolies and tax-subsidized operations, and an increase in the quality and quantity of seeds available to the farmers.

Target 120 - Training Brazilian personnel

Since the end use of seeds presents an entirely different set of conditions from those involved in production, processing and storage, a wide variety of specially trained personnel are required to carry out a successful program. These include botanists, physiologists, engineers, agronomists, salesmen, managers and inspectors for seed multiplication programs, regulatory inspectors, analysts, extension specialists, and processing plant managers and operators as well as their administrative leaders. For an effective program, technical personnel from research institutions and technicians in all organizations

concerned with seed will need additional training. This includes administrative leaders at the departmental and divisional levels. Technical workers must not only become aware of the importance of good seed but must also be trained to a level of proficiency which will enable them to carry out assigned duties in an effective manner.

It is expected that 1785 Brazilians will have received training of varying intensity when the project phases out in 1972.

Course of Action

Selection is made of appropriate Brazilian technicians for advanced training in seed technology in the U.S. During the course of the project it is expected that 25 technicians will be trained to the M.S. level. To date nine have gone to the U.S., and the present plan is to send eight new academic participants each year.

Approximately 60 selected leaders from the government and private industry will be provided short-term study and observation training in the U.S. To date, 40 have received this training and 8-10 additional technicians will be sent each year. Each group is given emphasis on a specific sector of the seed industry, public and private, but visit enough agencies and companies to observe all aspects of the U.S. seed industry.

The Escola Superior de Agricultura Luiz de ~~Queiroz~~ Queiroz (ESALQ) of the University of São Paulo was selected as the Brazilian university best prepared to establish university-level training in seed technology. Under this project USAID has supplied a wide range of equipment, literature, research and training materials, and technical assistance to assist in the development of this national training center. Additional assistance has been provided through the OSU/USAID contract and the Rockefeller Foundation. The first course in this new facility was given in February 1968 with 52 undergraduate and 16 graduate students receiving training. In 1969, 84 undergraduate and 11 graduate students were enrolled. Assistance will continue to be provided on an as-needed basis.

Two to four week technical courses have been given to provide intensive training in specific aspects of seed technology for selected agricultural technicians already assigned responsibilities with private companies, the Ministry or Secretariats. These courses give detailed information concerning the processing, ~~stax~~ storage, drying, inspection and/or analysis of seed. Thus far 269 persons have ~~xxx~~ received this type of training. These courses will be continued through 1971 at the rate of two per year.

Other training in Brazil is being provided through seed improvement appreciation courses held at various locations throughout the country sponsored by the Ministry and the State Secretariats of Agriculture and assisted by MSU. These courses are approximately five days in duration and accommodate 25-40 persons per course. To date 1203 technicians have participated in the 33 courses already presented.

In addition to these formal courses, continuous on-the-job training is provided to Brazilian technicians with whom the MSU contract personnel maintain frequent contact. Technical advice given at numerous meetings of special committees and general meetings on seed technology is and will be a part of the indirect training which benefits a large number of government and industry leaders.

Target No 5 - Establishing seed multiplication and distribution systems

Controlled seed multiplication systems are necessary to maintain and make available to the public an adequate quantity of high quality seeds of superior varieties produced and distributed in such a way as to insure genetic and identity. In the development of most seed industries the control and distribution of superior crop varieties is eventually passed from the public to the private sector through utilization of well-managed seed multiplication systems. Such programs are dependent upon superior varieties of crops resulting from effective research and testing programs. Without a planned systematic method for maintaining genetic purity, varietal identity is lost rapidly and research efforts wasted. Other factors must also be considered in seed multiplication and distribution systems including weeds, diseases, ~~and~~ viability and mechanical ~~and~~ purity.

Course of Action

In an attempt to avoid the problems encountered ~~and~~ and the frequent distortions found in seed certification programs in other Latin American countries, initially an attempt was made to avoid the precocious development of seed certification programs as such until the roles and responsibilities of the various agencies were ~~is~~ defined and the technical knowledge was available. Some of the southern states are now prepared to start formal seed certification programs and are being given technical guidance ~~in~~ the organization and implementation of these programs.

Primary efforts now and in the future will be directed ~~in~~ toward (1) the establishment of seed producers associations at the state and national level; (2) establishment of more uniform release policies by the research agencies and certification standards by certifying agencies; (3) establishment of certification programs as separate programs from seed regulatory programs; and (4) greater participation of the private sector in the planning and execution of these programs. Such work can best be accomplished through individual and small group conferences with those persons directly involved in policy establishment. The purely technical aspects such as minimum standards, isolation requirements, etc., are presented in the intensive training courses.

Target No 6 - Promoting the use and production of improved seeds and plant materials

A majority of the Brazilian farmers save ~~the~~ and plant the seed produced on their own farms with no knowledge of the reproductive capacity of these seeds and no opportunity to take advantage of genetically and/or physically superior new varieties. Most farmers accept this hazard because they have had no alternatives. As new varieties become available and physical facilities are established, a broad scale educational program at the farmer level will be needed to facilitate problem recognition and demonstrate solutions to the problem.

Course of Action

Many techniques that have been successfully used in other countries to promote the use and production of good seed are applicable to Brazil. Awareness on the part of seed ~~farmers~~ has been effectively gained through the use of "drill box" surveys and demonstrations to display the ~~is~~ differences between good and bad seed. Drill box surveys have ~~been~~ already been conducted in 5 states in Brazil. The use of the results of such surveys

through seed appreciation short courses ~~conducted~~ conducted initially by MCU and later by the Brazilians charged with this kind of educational effort is creating a desire for the available good seed. Efforts ~~have~~ were initially made to create an awareness among key farmers and technicians, while major education of farmers in general is reserved until sufficient quantities of good seed are available in a particular region to satisfy the general need.

As interest in and availability of good seed increases, a series of educational materials for use in explaining the various aspects of seed selection, seed treatment, seed laws, seed certification, etc. will be developed. It is anticipated that most of the educational work at the farmer level will be conducted by the Brazilian extension organization.

Target 127 - Planning and conducting seed research

Information on most suitable methods of production and marketing of seed can be obtained only as a result of research carried on under local conditions. Training and subsequent action programs can successfully proceed only to the extent that reliable information becomes available. Although a great deal is known about the seed industry in other countries there is a need for adaptive research in Brazil.

Before going too far in any program, information is needed relative to research findings already available, research now in progress, and the capacity of Brazilian agencies and institutions to conduct continuing research. Much is dependent upon the availability of competent staff, facilities, equipment and financial support. With this information on hand, seed development research programs will be encouraged and assisted in appropriate locations throughout the country. Assistance will consist of technical training to increase the competence of existing staff in planning and conducting research and in providing certain essential equipment not available in Brazil.

Course of Action

The first step was to conduct surveys to determine the areas in which the industry has a critical need of research. When this was determined, agricultural research workers were contacted for suggestions regarding principal problems limiting the production and utilization of improved seeds. Appropriate state or federal agencies or institutions which have the capability of doing research have been provided technical orientation along with certain equipment in order to conduct needed research. Some research that cannot yet be conducted in Brazil is being carried out in the U.S. by Brazilian participants working toward advanced degrees, as part of their training.

ELBRICK

W.H.

NONCAPITAL PROJECT FUNDING (Obligations in \$000)

Annex A

Table 1

Page 1 of 2 pages

COUNTRY: BRAZIL

PROP Date: Dec. 1969

ORIGINAL: X

Rev. N^o:

Project Title: Seed Industry Development

Project N^o: 512-15-130-247.5

UNCLASSIFIED

UNCLASSIFIED

Fiscal Years	Ap	L/G	Total	Cont ^{1/}	<u>Personnel Serv.</u>			<u>Participants</u>		<u>Commodities</u>		<u>Other Costs</u>	
					<u>AID</u>	<u>PIASA</u>	<u>Cont</u>	<u>U.S. Agen.</u>	<u>Cont</u>	<u>U.S. Agen.</u>	<u>Cont</u>	<u>U.S. Agen.</u>	<u>Cont</u>
Prior thru Actual FY 69	AG	G	1364	1107	58	-	730	-	113	199	120	-	144
Operational FY 70	AG	G	306	265	21	-	104	-	146	-	13	-	22
Budget FY 71	AG	G	247	226	21	-	103	-	88	-	13	-	22
B + 1 FY 72			-										
B + 2 FY 73			-										
B + 3 FY 74			-										
All Subs yrs			-										
Total Life	AG	G	1917	1618	100	-	937	-	347	199	146	-	188

^{1/} Memorandum (nonadd) column.

S. JAUPEIRO TCAID A 1265

Fiscal Years	AID-controlled Local Currency		Other Cash	Other Donor	Food for Freedom Commodities		
	U.S. owned	Country owned	Cooperating Country	Funds (\$ Equiv.)	Metric Tons (000)	CCC value Freight (\$000)	World Mark Price (\$00)
Prior thru Actual FY 69	119	44		174			
Operational FY 70	-	70		48			
Budget FY 71	-	66		24			
B + 1 FY 72							
B + 2 FY 73							
B + 3 FY 74							
All Subs yrs							
Total Life	119 ^{1/}	180 ^{2/}		246			

UNCLASSIFIED

UNCLASSIFIED

NE JAMELLO TQALD A 1265

^{1/} Dollar equivalent of KCr\$499,000 - PL480 Sec 104 (f).
^{2/} Trust Funds